

Our Lady's Bishop Eton Primary School



*Design is a funny word. Some people think it means how something looks. But of course it really means how it works.” Steve Jobs.
“To design is to recognise human problems, identify them and then execute the best solutions.” Ivan Chermayeff*

DESIGN AND TECHNOLOGY HANDBOOK

INTENT: DT CURRICULUM

At Our Lady's Bishop Eton Design and Technology is intended to inspire our children to work creatively and imaginatively. All of our children will have access to a broad, balanced and high quality DT curriculum which will:

- Develop pupil's competence to tackle a wide range of problems with increasing confidence
- Encourage investigation of a range of already existing products through focussed practical tasks
- Develop their application of skills through a range of *purposeful* activities
- Teach specific technical knowledge, designing and making skills
- Teach relevant vocabulary

IMPLEMENTATION: CITIZEN OF THE WORLD CURRICULUM

Design & Technology is part of our school's Citizen of the World Curriculum along with Art, Computing, Geography, History, ICT, Modern Foreign Languages and Music. All of these subjects are maintained as valued and high profile aspects of our curriculum provision and we recognise their contribution to our children's Spiritual, Moral, Social and Cultural development and to their development as accountable, compassionate, resilient, responsible, resourceful, respectful and passionate stewards of our world, who can:

- Relate to people's place within the wider world, their relationships with others, their histories, their presents and their futures
- Connect the local to the global
- Advocate inter-connected, sustainable and thoughtful living
- Know the value of the arts and culture to society

IMPLEMENTATION: PLANNING

Philosophy: Our philosophy is to '**inspire a love of DESIGN AND ENGINEERING**' this will be developed through the six essential strands of good DT practice.

User – children should have a clear idea of who they are designing and making products for, considering their needs, wants, interests or preferences. The user could be themselves, an imaginary character, another person, client, consumer or a specific target audience.

Purpose – children should know what the products they design and make are for. Each product should perform a clearly defined task that can be evaluated in use.

Functionality – children should design and make products that function in some way to be successful. Products often combine aesthetic qualities with functional characteristics. In D&T, it is insufficient for children to design and make products which are purely aesthetic.

Design Decisions – when designing and making, children need opportunities to make informed decisions such as selecting materials, components and techniques and deciding what form the products will take, how they will work, what task they will perform and who they are for.

Innovation – when designing and making, children need some scope to be original with their thinking.

Projects that encourage innovation lead to a range of design ideas and products being developed, characterised by engaging, open-ended starting points for children's learning.

Authenticity – children should design and make products that are believable, real and meaningful to themselves i.e. not replicas or reproductions or models which do not provide opportunities for children to make design decisions with clear users and purposes in mind.

LONG TERM PLAN	AUTUMN	SPRING	SUMMER
YEAR 1	Mechanisms: Sliders & Leavers Christmas Card	Structures: Freestanding structure Chair for Baby Bear	Food; Preparing Fruit and Vegetables Fruit Kebabs for summer's day
YEAR 2	Textiles: Templates & Joining Techniques Christmas Tree Decoration/Puppet	Food: Preparing Fruit and Vegetables Vegetable soup for someone who is ill	Mechanisms: Wheels and Axles Car
YEAR 3	Mechanical Systems: Levers & Linkages Pop Up Christmas Card	Food: Healthy and varied diet Healthy sandwich	Textiles: 2d shape to 3d product Purse/Pencil case
YEAR 4	Electrical Systems: Simple Circuits & Switches Snowman with light up nose	Food: Healthy and varied diet Egyptian Meal	Structures: Shell structures Recycling box
YEAR 5	Food; Culture & Seasonality Victorian Sponge Cake	Structures: Frame structures Bird Box	Mechanical Systems: Pulleys, gears or cams Fairground ride
YEAR 6	Textiles: Combining different fabric shapes Mobile phone/tablet case	Food: Culture and seasonality Healthy Soup	Electrical Systems: Complex switches and circuits Alarm for display cabinet

EYFS

EYFS: Expressive arts and design: Exploring and using media and material; Being imaginative.

AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
Selecting and using different media and materials	Andy Goldsworthy – Transient Art – Autumn Treasures	Winter Pictures Chinese Dragons / Lanterns	Andy Goldsworthy – Transient Art (Stick Man)	Observational drawings of chicks	Travel and Transport – Make and design vehicles
Self-portraits with a range of media	Making Puppets linked to Fairy tales	Kandinsky – Circle pictures.	Spring observational drawings	Making Bird feeders outside	
Colour mixing	Stars of David (Hanukkah)	Designing and Making a Pizza	Easter Cards	Make and design capes for superheroes	
	Autumn observational Drawings				
	Christmas Cards Christmas marshmallow treat				

DEVELOPMENT MATTERS: Physical Development: Moving and Handling

30-50mths

- Use one-handed tools and equipment, e.g. makes snips in paper with child scissors.

40-60mths

- Use simple tools to effect changes to materials.
- Handle tools, objects, construction and malleable materials safely and with increasing control.

ELG

- Handle equipment and tools effectively, including pencils for writing.

DEVELOPMENT MATTERS: Physical Development: Health and Self Care

30-50mths

- Understand that equipment and tools have to be used safely.

40-60mths

- Show understanding of the need for safety when tackling new challenges and consider and manage some risks.
- Show understanding of how to transport and store equipment safely.
- Practise some appropriate safety measures without direct supervision.

Teachers use the Projects On A Page medium term planning pro forma to develop their lesson sequences.

<p>1. Year Groups Years 1/2</p>	<p>2. Aspect of D&T Mechanisms</p> <p>Focus Sliders and Levers</p>	<p>4. What could children design, make and evaluate? class/group storybook poster display greenhgs card class/group information book storyboard other – specify</p>	<p>5. Intended users themselves younger children parents grandparents friends visitor to school other – specify</p>	<p>6. Purpose of products celebration event information pleasure interests hobbies educational other – specify</p>	<p>16. Possible resources books and everyday products with levers and slider mechanisms</p> <p>slider and lever teaching aids</p> <p>card strips, card rectangles, paper, masking tape, paper fasteners, paper binders, stick glue, PVA glue, finishing materials and media</p> <p>left/right handed scissors, cutting mats, card drills</p>	<p>17. Key vocabulary slider, lever, pivot, slot, bridge/guide</p> <p>card, masking tape, paper fastener, join</p> <p>pull, push, up, down, straight, curve, forwards, backwards</p> <p>design, make, evaluate, user, purpose, ideas, design criteria, product, function</p>
<p>3. Key learning in design and technology</p> <p>Prior learning</p> <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. <p>Designing</p> <ul style="list-style-type: none"> Generate ideas based on simple design criteria and their own experiences, explaining what they could make. Develop, model and communicate their ideas through drawings and mock-ups with card and paper. <p>Making</p> <ul style="list-style-type: none"> Plan by suggesting what to do next. Select and use tools, explaining their choices, to cut, shape and join paper and card. Use simple finishing techniques suitable for the product they are creating. <p>Evaluating</p> <ul style="list-style-type: none"> Explore a range of existing books and everyday products that use simple sliders and levers. Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> Explore and use sliders and levers. Understand that different mechanisms produce different types of movement. Know and use technical vocabulary relevant to the project. 	<p>7. Links to topics and themes Festivals and Celebrations Traditional Tales Nursery Rhymes history-based topic geography-based topic science-based topic other – specify</p>	<p>10. Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> Children explore and evaluate a collection of books and everyday products that have moving parts, including those with levers and sliders, e.g. <i>What is it? Who is it for? What is it for?</i> Use questions to develop children's understanding e.g. <i>What do you think will move? How will you make it move? What part of the product moved and how did it work? How do you think the mechanism works? What else could move in the product? How well does it work?</i> Introduce and develop vocabulary e.g. lever, pivot, slider, left, right, push, pull, up, down, forwards, backwards, in, out. 	<p>8. Possible contexts imaginary story-based toys games people who help us home school garden playground local community environment other – specify</p>	<p>9. Project title Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 10, 12 and 14.</p>	<p>11. Related learning in other subjects</p> <ul style="list-style-type: none"> Spoken language – participate in discussion about books and other products with moving parts, taking turns and listening to what others say. Ask relevant questions to extend their knowledge and understanding. Build technical and directional vocabulary. 	<p>18. Key competencies problem-solving teamwork negotiation consumer awareness organisation motivation persuasion leadership perseverance other – specify</p>
	<p>12. Focused Tasks (FTs)</p> <ul style="list-style-type: none"> Demonstrate simple levers and sliders to the children using prepared teaching aids. It is helpful if these are also used in context e.g. the slider is used to show a snail appearing from behind a stone, the lever is used to show a butterfly flying to a flower. Use questions to develop children's understanding e.g. <i>How does the slider move? How does the lever move? What part of the mechanism is the pivot? What does the movement of the slider and lever need you do?</i> Following teacher demonstration of the correct use of tools and materials, children should develop their knowledge and skills by replicating the slider and lever teaching aids. Encourage children to add pictures to their mechanisms. 	<p>14. Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> Discuss with the children what they will be designing, making and evaluating e.g. <i>Who will your product be for? What will be its purpose? How do you want it to move? Will you use a lever or a slider?</i> Generate simple design criteria with the children e.g. the mechanism should work smoothly, it should make the right type of movement. Encourage the children to develop their ideas through talking, drawing and making mock-ups of their ideas with paper and card. Discuss the finishing techniques the children might use e.g. using digital text and graphics, paint, felt tipped pens or collage. As a whole class, talk about the order in which the mechanisms will be made. Ask children to evaluate their developing ideas and final products against the original design criteria. 	<p>13. Related learning in other subjects</p> <ul style="list-style-type: none"> Spoken language – children listen and respond appropriately to adults. Ask relevant questions to extend their knowledge and understanding. Build technical and directional vocabulary. Mathematics – describe position, direction and movement. Use appropriate standard and non-standard measures. 	<p>15. Related learning in other subjects</p> <ul style="list-style-type: none"> Spoken language – ask relevant questions to extend their knowledge and understanding. Build technical and directional vocabulary. Use spoken language to develop understanding through imagining and exploring ideas. Art and design – use colour, pattern, line, shape. Computing – digital graphics and text could be incorporated into final products as the background or moving parts. 	<p>19. Health and safety Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.</p>	<p>20. Overall potential of project</p>

Mechanisms – Years 1/2 – Sliders and Levers

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IMPLEMENTATION: KNOWLEDGE & SKILLS PROGRESSION

Projects on a Page provides progression and coverage of the new NC programmes of study for KS1 and 2. Three types of activity which are included in the delivery of each topic.

- **Investigative and Evaluative Activities (IEAs)** where children learn from a range of existing products and find out about D&T in the wider world;
- **Focused Tasks (FTs)** where they are taught specific technical knowledge, designing skills and making skills;
- **Design, Make and Evaluate Assignment (DMEA)** where children create new functional products with users and purposes in mind.

PROGRESSION OF SKILLS: The Progression Framework provides a series of developmental steps intended to help schools with curriculum planning. The framework also includes elements of D&T which are not included in the programmes of study which are considered by the Design and Technology Association to be fundamental to children's learning. We have mapped out these stages to provide teaching staff with end of year markers to ensure all skills are covered and progression is embedded. We ensure that the children's learning from KS1 is revisited in early KS2 and their learning from KS1 and early KS2 is revisited in late KS2, each time using the knowledge, understanding or skills in a more sophisticated way.

Year 1	Year 2	Lower Key Stage 2	Upper Key Stage 2	All DT Age Appropriate
<p>Developing, Planning and Communicating Ideas. Follow verbal instructions Explain what they are making, which materials they are using and who it is for</p>	<p>As year 1 plus Describe what they need to do next Select and name the tools needed to work the materials Select appropriate technique explaining</p>	<p>Developing, Planning, Communicating Ideas. Investigate similar products to the one to be made to give starting points for a design Draw/sketch products to help analyse and understand how products are made Think ahead about the order of their work and decide upon tools and materials</p>	<p>Developing, Planning and Communicating Ideas. Investigate products/images to collect ideas Sketch and model alternative ideas Develop one idea in depth Combine modelling and drawing to refine ideas Plan the sequence of work using a storyboard Record ideas using annotated diagrams</p>	<p>Select appropriate tools and techniques for making products Suggest alternative ways of making their product, if first attempts fail</p>

<p>Name the tools they are using Select materials from a limited range that will meet the design criteria Select pictures to help develop ideas Use pictures and words to convey what they want to design and make Discuss their work as it progresses Food Develop a food vocabulary using taste, smell, texture and feel Group familiar food products e.g. fruit and vegetables Cut, peel, grate, chop a range of ingredients Work safely and hygienically Understand the need for a variety of foods in a diet Measure and weigh food items, non statutory measures e.g. spoons, cups Construction. Join appropriately for different materials and situations e.g. glue, tape Sheet Materials. Fold, tear and cut paper and card Roll paper to create tubes Cut along lines, straight and curved Use simple pop ups Evaluating. Say what they like and do not like about items they have made and attempt to say why Talk about their designs as they develop and identify good and bad points Talk about changes made during the making process Discuss how closely their finished products meet their design criteria</p>	<p>First.....Next.....Last.... Explore ideas by rearranging materials Model ideas with kits, reclaimed materials Describe their models and drawings of ideas and intentions Use kits/reclaimed materials to develop an idea Use drawings to record ideas as they are developed Add notes to drawings to help explanations .Textiles Colour fabrics using a range of techniques e.g. fabric paints, printing, painting Cut out shapes which have been created by drawing round a template onto the fabric Join fabrics by using running stitch, fabric glue, staples over sewing, tape Decorate fabrics with buttons, beads, sequins, braids, ribbons Construction. Make vehicles with construction kits which contain free running wheels Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels Attach wheels to a chassis using an axle Mark out materials to be cut using a template Cut strip wood/dowel using hacksaw and bench hook. Sheet Materials Curl paper Use hole punch Insert paper fasteners for card linkages Create hinges Evaluating. As Year 1 but with greater depth of discussion and use of relevant vocabulary.</p>	<p>Plan a sequence of actions to make a product Record the plan by drawing (labelled sketches) Develop more than one design or adaptation of an initial design Propose realistic suggestions as to how they can achieve their design ideas Add notes to drawings to help explanations Food Develop sensory vocabulary/knowledge using, smell, taste, texture and feel Analyse the taste, texture, smell and appearance of a range of foods Follow instructions Make healthy eating choices from and understanding of a balanced diet Join and combine a range of ingredients e.g. snack foods Work safely and hygienically Measure and weigh ingredients appropriately Textiles Year 3. Explore and begin to understand seam allowance Join fabrics using running stitch / over sewing, Explore fastenings and recreate some e.g. sew on buttons and make loops Prototype a product using J cloths Use appropriate decoration techniques Create a simple pattern Understand the need for patterns Construction Incorporate a circuit with a bulb or buzzer into a model Create shell or frame structures, strengthen frames with diagonal struts Make structures more stable by giving them a wide base Prototype frame and shell structures Measure and mark square selection, strip and dowel accordingly to 1cm Use glue gun with close supervision (one to one) Sheet Materials Cut slots Cut internal shapes Use lolly sticks/card to make levers and linkages Use linkages to make movement larger or more varied. Use and explore more complex pop ups Create nets Evaluating Identify the strengths and weaknesses of their design ideas Decide which design idea to develop Consider and explain how the finished product could be improved Discuss how well the finished product meets the design criteria and how well it meets the needs of the user.</p>	<p>Use models, kits and drawings to help formulate design ideas Make prototypes Use found information to inform decisions Use a computer to model ideas Draw plans which can be read/ followed by someone else Give a report using correct technical vocabulary Food Prepare food products taking into account the properties of ingredients and sensory characteristics Select and prepare foods for a particular purpose Taste a range of ingredients, food items to develop a sensory food vocabulary for use when designing. Weigh and measure using scales Cut and shape ingredients using appropriate tools and equipment e.g. grating Join and combine food ingredients appropriately Work safely and hygienically Show awareness of a healthy diet from an understanding of a balanced diet Textiles Year 6 Create 3D products using pattern pieces and seam allowance Understand pattern layout Decorate textiles appropriately often before joining components Pin and tack fabric pieces together Join fabrics using over sewing, back stitch, blanket stitch Combine fabrics Make quality product fir for purpose Construction Use bradawl to mark hole positions Use hand drill to drill tight and loose fit holes Cut strip wood, dowel, square section wood accurately to 1mm Join materials using appropriate methods Incorporate motor and a switch into a model Control a model using an ICT control programme Use a cam to make an up and down mechanism. Build frameworks using a range of materials e.g. wood, card corrugated plastic to support mechanisms Use glue gun with close supervision Sheet Materials Cut slots Cut accurately and safely to a marked line Join and combing materials with temporary, fixed or moving joinings Use craft knife, cutting mat and safety ruler under one to one supervision if appropriate Choose an appropriate sheet material for the purpose Evaluating Use the design criteria to inform their decisions about ways to proceed Justify their decisions about materials and methods of construction Reflect on their work using design criteria stating how well the design fits the needs of the user Identify what does and does not work in the product. Make suggestions as how their design could be improved</p>	<p>Explore the sensory qualities of materials and how to use materials and processes Measure, mark out, cut and shape a range of materials, and assemble, join and combine components and materials accurately Follow safe procedures for food safety and hygiene Generate ideas for products after thinking about who will use them and what they will be used for, using information from a number of sources, including ICT-based sources Develop ideas and explain them clearly, putting together a list of what is needed to achieve a design Plan what has to be done, suggesting a sequence of actions and alternatives, if needed Communicate design ideas in different ways as these develop, bearing in mind aesthetic qualities, and the uses and purposes for which the product is intended Reflect on the progress of their work as they design and make, identifying ways they could improve their products Carry out appropriate tests before making any improvements Recognise that the quality of a product depends on how well it is made and how well it meets its intended purpose [socially, economically, environmentally] Identify how the working characteristics of materials affect the ways they are used Identify how electrical circuits, including those with simple switches, can be used to achieve results that work.</p>
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IMPLEMENTATION: KNOWLEDGE & SKILLS PROGRESSION: SCHOOL FOOD

- The competences reflect UK-wide practice and represent core skills and knowledge around food and provide an essential benchmark.
- They are progressive and cumulative from one age phase to the next.
- They could be met at home, school or through other activities.
- They show essential knowledge and capability – they are neither a curriculum nor an examination specification.
- Their aim is to help children and young people to develop the skills and knowledge to make and implement healthy food choices

	DIET AND HEALTH	CONSUMER AWARENESS	COOKING (FOOD PREPARATION AND HANDLING SKILLS)	FOOD SAFETY
By the age of 7-9, children should:	Be aware that we all need a balanced and varied diet to grow, be active and maintain health, and that we need to eat more of some foods than others e.g. we all need to eat at least 5 portions of fruit and vegetables every day Recognise that food and water are basic requirements of life. know that family and friends may eat or avoid certain foods. Be aware that being active and looking after yourself are important for health, e.g. brushing teeth twice a day	Recognise that all food comes from plants or animals. Recognise that food can be grown at home or purchased from local farms and markets, shops and supermarkets. Be able to talk about which foods they like or dislike through tasting sessions. Know that people choose different types of food, based on who they are with, preference, season, time and occasion (including celebrations). Be aware that some foods have labels which provide information to help make a choice.	Recognise and taste a range of familiar ingredients, e.g. fruit, vegetables, cereals, dairy, meat, eggs. Name and use a range of basic tools safely, e.g. small knife, chopping board, measuring spoon. Use a range of food preparation skills with supervision, e.g. peeling, slicing, mixing, scooping, grating, spreading. With help prepare a range of healthy recipes safely and hygienically. Recycle food packaging and be careful not to waste food when preparing and cooking.	Recognise the importance of preparing and cooking food safely and hygienically, e.g. cleaning up regularly Be able to get ready to cook, e.g. tie back long hair, wash hands, wear an apron. Be aware that food purchased or cooked needs to be stored in different ways to keep it safe, e.g. fridge, freezer.
By the age of 11-12, children should:	Make food choices based on the understanding that a healthy diet is made up from a variety and balance of different food and drinks. Be aware of the importance of a healthy and balanced diet, good oral health and being physically active for health and wellbeing. Know that a variety of food is needed in the diet because different foods provide different substances for our health, namely nutrients, water and fibre. Be aware that food needs change and that some people eat or avoid certain foods, e.g. allergy or religious belief.	Research where and how food is produced and sold, e.g. growing food at school/home, visiting a farm. Consider cost when helping to shop for food and cook. Be aware that advertising can influence what they choose to eat. Know that people choose different types of food and that this may be influenced by availability, season, need, cost, minimal packaging, where the food is produced, culture, religion and peer-pressure.	Name, taste and prepare a broader range of ingredients and healthy recipes, accounting for ethnic diversity. Select and use appropriate tools and equipment safely when preparing and cooking food. Demonstrate an increasing range of food preparation skills, e.g. accurate weighing and measuring, kneading. Know how to store, prepare and cook food safely and hygienically. Actively minimise food waste, compost fruit and vegetable peelings and recycle food packaging	Know that food safety means preventing contamination, spoilage and decay when handling and storing food, so that it is safe to eat. Demonstrate good food safety practices when getting ready to store, prepare and cook food e.g. keep raw meats away from other food. Use information on food labels to store food correctly.

IMPLEMENTATION: VOCABULARY

DEVELOPING, PLANNING AND COMMUNICATING IDEAS		
AESTHETICS Appreciation of an object's appearance and whether it is pleasing.	ANNOTATED DIAGRAM Labelled drawing.	APPEARANCE The way that something looks.
ARTEFACT Any product that has been made, whether by pupils or commercially.	BRITTLE Able to break easily.	CARD A flat piece of thick paper.
CHART: bar chart Type of graph with horizontal or vertical bars representing the values. flow chart Diagram showing a sequence of operations, that is, the order in which they are carried out. pie chart Type of graph which show the proportion of parts to the whole.	COMPONENTS LIST List of parts needed to make a product.	CROSS-SECTION A view of an object, either imaginary or made by cutting through it.
CUSTOMER SURVEY A way of finding out what people think of a product or idea, often by a questionnaire.	DESIGN To create a plan or scheme either from new ideas or by presenting existing materials in a new way.	DESIGN BRIEF A statement of what needs to be designed and/or made.
DESIGN PROCESS Process of designing from identifying a need, generating a design, planning and making it and evaluating its performance.	DESIGN PROPOSAL A possible solution in response to a design brief.	DISASSEMBLY Breaking down a product into its component parts, either in reality or in an imaginary way.
DISMANTLE To take a product apart.	DRAWING TOOLS Key Stage 1 and 2 pupils should be familiar with using the following equipment: crayons, marker pens, paints, pastels, pencils, pens	ENGINEERING PROCESS of applying scientific principles to designing and making products and solving problems.

	and with using the following tools: compass Device for drawing circles. protractor Measuring tool showing angles. stencil Shaped template to draw inside for repeating patterns.	
ENLARGED VIEW To show greater detail by making the original larger.	EQUIPMENT The tools and materials used to carry out a task.	ERGONOMICS Study of how artefacts and environments can be matched to the needs of people.
EVALUATION Assessment of how an artefact functions compared with its specification.	EXPLODED Drawing A 'blown-apart' drawing showing how the components are joined to make a product.	FINAL DESIGN Chosen solution from a selection of design ideas.
FLEXIBLE Able to be bent without breaking.	FOLD To double material such as paper against itself in the following ways: mountain-fold As an upside-down 'V' shape. fan fold V-folds radiating from a point. U-fold As a rectangular 'V' shape. V-fold Also known as a 'valley' fold.	FUNCTION The intended use of any product.
GRAPHICS Use of pictures and words to communicate ideas and information.	GRAPHS Diagrams which show how two or more sets of data are related; see also chart.	GRID An ordered network of lines, often in squares as in graph paper.
INGREDIENT A component of a mixture, especially in food technology. INGREDIENTS LIST List of all the components needed to make a product.	INVESTIGATION In design and technology, analysing a design brief and carrying out research.	LANDSCAPE Using a piece of paper width-ways, as in a landscape picture.
MALLEABLE Able to be worked into different shapes or bent without cracking.	MARK OUT To follow measuring with the appropriate marking tool i.e. pencil or chinagraph pencil.	MARKET RESEARCH Used to find out people's needs and tastes, often by questionnaire.
MIND MAP Discussing all the ideas that can be thought of on a particular subject and linking ideas.	MOBILE A light artefact designed to be hung and blown by air currents.	MOCK UP A model which allows you to try out ideas using cheaper materials/temporary joints.
MODEL Usually a 2D or 3D outcome of modelling.	MODELLING Trying out ideas in ways which are quicker, cheaper or more convenient than making the real thing.	MODIFY To alter or change a design.
NET The flat or opened-out shape of an object such as a box.	OPAQUE Cannot be seen through.	PAPER Material made from wood pulp, used for writing, drawing, printing and wrapping.
PARTS DRAWING Drawing showing the size and shape of components to make up a product.	PARTS LIST List of components required to make a product.	PATTERN A template used as a guide to cutting out shapes in paper, wood, plastic, metal or fabric.
PERFORMANCE The way in which a product carries out the task which it is designed to do.	PERSPECTIVE DRAWING Form of drawing, with vanishing points, to show depth and distance.	PICTOGRAM Symbol, often used to record statistics, such as in a survey of favourite biscuits.
PLAN A view of a building or an object, seen from looking on it from above.	PLANNING Setting out an aim and the ways and time by which it might be achieved.	PORTRAIT Using a piece of paper with its narrow edge at the bottom, as in a portrait.
PRIMARY SOURCE Original source of information as opposed to information collected from published materials,	PRODUCT ANALYSIS A way of investigating and describing products in order to develop new designs.	PROPORTION The share of a whole, as in a pie chart which shows how the different parts of something make up its whole.
PROTOTYPE A model which is made to test whether a design will work.	questionnaire A survey designed to find out people's feelings or likes and dislikes.	RECIPE A list of ingredients and instructions for preparing food.
RESEARCH In design and technology, the part of the design process which involves finding information.	RIGID Not flexible.	RISK ASSESSMENT Identifying the degree of probability of a hazard or danger and acting accordingly.
SECONDARY SOURCE Information collected from non-original sources, e.g. published material, the Internet, CD-ROM.	SECTION DRAWING Drawing which shows an object as though it has been cut through.	SEQUENTIAL DIAGRAM Series of drawings to show how a product is made.
SHAPE Form of an object produced by its outline.	SKETCH A rough drawing as opposed to a plan or finished drawing	SPECIFICATION Describes what a product has to do.
STABLE Firmly fixed, not easily swayed or moved.	STYLE Used in visual judgements e.g. hi-tech, traditional, outdoor.	SYNTHETIC Made or manufactured, rather than a natural product.
SYSTEM A series of components or products organised to perform a task.	TASTE TEST Systematic recording of views on a food sample.	TECHNOLOGY The use of scientific, material and human resources to meet the needs of society.
TEMPLATE A shape drawn to assist in cutting out.	TESSELLATIONS Shapes which interlock together and form regular patterns.	TEXTURE Surface quality of being, for example, hard, soft, smooth or rough.
THREE-DIMENSIONAL Having height, width and length.	TRANSLUCENT A material which when looked through, allows light to pass through but is not clear.	TRANSPARENT A material through which you can see, such as glass.
TWO-DIMENSIONAL Having height and width only, a flat representation.	WORK PLAN Plan which shows a sequence of work and the time each stage might take up.	WORKING DRAWING Drawing which contains the information needed to make a product but is constantly updated as changes are made.
MATERIALS AND COMPONENTS		
ABRASIVE Any material which can be used to wear away the surface of another, such as glasspaper.	ACRYLIC A hard, rigid and shiny plastic material available in transparent, translucent and opaque forms and in bright colours	ADHESIVE Substance which holds materials together.
ALUMINIUM Light, soft metal and a good conductor, for example, baking foil; used for making switches.	ARTSTRAWES Bendable straws which can interlock; useful for frameworks.	AXLE Rod on which one or more wheels can turn.
BALSA Lightweight wood useful for model-making .	BATTERY Two or more cells which supply electrical current.	BATTERY SNAPS Clips which connect on batteries or battery holders.
BEAM Long piece of timber or metal, supported at both ends.	BINCA Textile with regular weave, useful forembroidery	BOLT A metal fastener, usually used with a nut.
BRASS Alloy of copper and zinc; good conductor.	BULB Electrically powered light with a glowing filament.	BULB HOLDER Component which houses a bulb.

BUZZER Device which emits a noise when current is supplied.	CALICO Coarse, heavyweight fabric usually used for producing prototype garments.	CAM Specially shaped wheel, or one with a hole offcentre; when it rotates, anything resting on its edge will bob up and down, as in a pull-along toy.
CHASSIS Base frame of a vehicle.	CIRCUIT Complete path through which an electrical current passes.	Clay Mouldable modelling material.
COG Single tooth or projection on the rim of a gear wheel.	COTTON Lightweight natural fabric or thread for sewing.	DOWEL Wood cut to a cylindrical shape, available in various widths.
DRIVE BELT The belt which connects and transfers movement between two pulleys.	DYE Natural or synthetic substance used to colour fabric.	EMERY CLOTH Abrasive sheet, used on metals in preference to glasspaper.
FAT A nutrient found in plant or animal foods which provides energy; the solid form of oil.	FIBREBOARD Board made from compressed wood fibres (see also MDF).	FIBRES Threads which can be spun or woven into a fabric.
FOIL Thin sheet of metal, such as aluminium baking foil.	GEAR A wheel with teeth around its edge, usually fixed to a shaft.	GEAR TRAIN Gear wheels whose teeth mesh together so that when one turns so do the others.
GLASSPAPER Abrasive sheet.	GLUE Adhesive.	HARDBOARD Thin board composed of wood fibre, usually smooth on one side and textured on the other.
HESSIAN Loosely woven coarse fabric.	HINGE Movable joint.	Laminate A thin layer of material, such as wood, plastic or transparent film.
LOLLIPOP STICKS Strong, pre-cut sticks useful in frame construction.	MAGNET A product containing iron, which will attract other ferrous metals.	MASKING TAPE Low tack adhesive tape
MDF MEDIUM DENSITY FIBREBOARD – a board made from wood fibre, smooth on both sides and available in various thicknesses.	MESH The open space between woven threads.	METAL A natural element found in the Earth's crust, such as iron or copper.
MOULDABLE MATERIAL A material which can be shaped, such as plasticine, clay or Plastazote.	NAIL A fastener made from steel wire.	NUT A hexagonal ring with an inner thread into which a bolt screws
PAPER CLIP Light, bendable metal fastener for paper.	PARALLEL CIRCUIT A circuit which has a number of possible alternative pathways which may be switched independently e.g. house lighting.	PINE A softwood.
PLASTIC A group of synthetic materials which includes acrylic, nylon and polystyrene; 'plastic' means able to be shaped without cracking or breaking.	PLASTICINE Mouldable substance used for modelling.	PLAY DOUGH Mouldable material made largely from flour; can be baked.
PLYWOOD Manufactured board made by gluing layers of thin wood together.	POLYSTYRENE Lightweight thermoplastic material, used for model kits, disposable cutlery and as an expanded foam for cups and packaging.	PRESSURE PAD A switch which is activated when it is pressed, as in a doormat which rings a bell when it is stepped on.
PROPELLER A shaft with blades.	pulley A grooved wheel over which a rope can run.	Pva Polyvinyl Acetate: a white, ready-mixed glue, used particularly for wood.
RATCHET Toothed wheel which a pawl fits in, ensuring that motion is in one direction only.	RECLAIMED MATERIALS Materials such as packaging, which have served their original purpose, or off-cuts which would otherwise be wasted.	RESISTOR A component which restricts the flow of electric current in a circuit.
RIVET Fastener for joining sheet metals.	RUST Corrosion which affects iron materials.	SANDPAPER Common term for glasspaper.
SCREW Fastener made from steel or brass, tapered for wood or used with nuts.	SELF-TAPPING SCREW Fastener made from hardened steel which cuts its own thread when inserted in sheet metal or plastic.	SELLOTAPE Brand name for adhesive tape.
SHAFT A rod which transmits motion.	SLIDE SWITCH A switch which operates when a slider is pushed.	Softwood Generally wood from coniferous trees, such as pine.
SPACER A component placed between two parts, such as between a wheel and the side of a buggy.	SPRING Something that returns to its original shape after it has been stretched; coiled metal wire and elastic bands are examples.	SUGAR A type of carbohydrate, often used in cooking to sweeten food.
SWITCH A device which makes or breaks a circuit.	TERMINAL BLOCK A block in which electrical wires can be joined together.	TEXTILE A woven material.
TILT SWITCH A switch which operates when tilted at an angle.	TIMBER Wood, often in bulk, supplied in usable forms and sizes.	WASHER A component which distributes the load applied on it, as in underneath a nut or screw.
WHEEL Circular frame or disc which rotates about a centre, enabling linear (straight-line) movement from circular motion.	WINCH Device to wind string or rope on to a wheel.	WIRE Metal drawn out into a thread or rod of varying thickness.
WOOD Material trees are made of.	WOOL Natural thread spun from the hair of sheep or goats.	
TOOLS, EQUIPMENT AND PROCESSES		
APPLIQUÉ Describes method of stitching/gluing patches on to fabric (originally to mend holes in clothes).	APRON Protective item of clothing.	BAKING SHEET Flat metal sheet for baking pizzas, rolls etc.
BASIN China or plastic bowl for mixing ingredients in.	Batik Method of dyeing material in which parts to be left uncoloured are waxed.	Bench Hook Device which hooks over the edge of a table or tightened into bench vice to provide a platform on which to work with materials.
BODKIN Large-eyed blunt needle for weaving or threading.	BRADAWL Hand tool used to make small holes in wood before inserting screws and nails.	CAN OPENER Device for opening metal cans.
CHOPPING BOARD Board (nowadays usually plastic) used for chopping ingredients.	CLADDING The use of sheet material to cover a frame structure.	Compass Cutter Hand tool for cutting holes in paper or card.
compression The application of pressure to squeeze an object.	Computer Control The use of programming a computer in order to instruct a device to carry out a sequence of actions.	conductor A material which allows heat or electricity to pass through it.

CONSTRUCTION KIT Kit of parts ready to assemble to make models or structures.	CONTROL Process of making an action take place; computer control involves programming the computer so it will instruct a device to carry out an action.	COPING SAW Saw with removable blade, used for cutting curves in wood or plastic; its teeth face the handle so it cuts on the pull stroke (safety warning).
CRANK Mechanism that can change circular movement to linear (straight-line) movement.	CROCODILE CLIP Device shaped like a clothes-peg, used to attach wires to electrical components.	CURRENT Flow of electricity through an electrical circuit.
CUTTING MAT Protective surface on which to cut paper or card without scoring through it.	DECORATION Attractive detail.	DISHCLOTH Soft cloth used in washing dishes.
DRILL Tool for making holes in wood, plastic or metal; can be mounted in a drill stand for extra safety (safety warning).	EFFORT The force which is put into a mechanical system.	ELECTRICITY A form of energy.
ENERGY Capacity to do work, supplied by burning fuel, whether it is food for people, petrol for cars or electricity for machines.	FILE Hand tool used to shape and smooth rough edges on wood, plastic or metal.	FOOD PREPARATION: bake To cook in an oven. baste To coat with oil while roasting. beat To mix with a fork or whisk. boil To cook in water held at boiling point. dice To cut into cubes. glaze To coat with egg or milk to give a shiny finish after baking. grill To cook close to a heat source. knead To form a dough mixture. roast To baste with hot oil to keep food moist while cooking in an oven. rub in To mix together flour and fat using the fingertips until it resembles fine breadcrumbs. set To allow a liquid or runny mixture to solidify when cooled. simmer To almost boil, but where bubbles only break the surface from time to time.
Force Something that changes the speed or direction of an object.	FRAMEWORK A structure made by joining together a number of pieces of wood, metal, card or plastic.	FRICITION The resistance trying to prevent two surfaces moving against each other.
FULCRUM Point which supports a lever or on which a beam will balance.	G CLAMP To secure work or equipment e.g. bench hook to table.	Gearing A gear train set up to increase or decrease speed.
GLUE GUN Electrical device which heats sticks of glue; lowmelt versions are safer for classroom use (safety warning).	GOGGLES Eye protectors, essential for many activities in design and technology and science.	GOGGLES Eye protectors, essential for many activities in design and technology and science.
HAMMER Hand tool with a metal head for striking nails or other tools; the range includes small pin hammers, claw hammers and specially headed hammers for beating metals (safety warning).	HEALTHY EATING To eat the correct balance of a variety of food to maintain good health.	HYDRAULICS Using a liquid such as water to transmit force over a distance to make actions take place.
HYGIENIC To maintain health through cleanliness.	HOLE PUNCH Punch for making holes in paper or card.	INPUT What goes into a system.
INSULATION Protecting from change in temperature, so that gloves insulate hands against cold weather.	INSULATOR A material which does not allow electricity to pass through it, or which slows down heat transfer.	JIG Holding device for materials and tools, to aid cutting, drilling or forming.
JOINT Place where two or more things are joined together, can be rigid or flexible.	JUNIOR HACKSAW Small saw with removable blades for cutting small sections of wood, metal or plastic. Its teeth face forwards so it cuts on the push stroke	KNIVES Cutting tools, from paring and grapefruit knives to craft knives (safety warning).
LADLE Deep, long-handled spoon for soups or sauces.	LAMINATING Putting thin layers of material together as in plywood or covering with a thin layer. layering The use of several layers to stiffen sheet materials.	LEVER A mechanism which allows a greater force to be exerted, such as a spoon used as a lever on the lid of a tin.
LINEAR Arranged in a straight line or moving in a straight line as in linear movement.	LINKAGE A means of connecting components together usually so they can move.	Load Force acting on a structure.
LOOM Device for weaving yarn, ranging from peg looms to frames.	MACHINE Equipment designed to apply mechanical power to perform a function.	MEASURING JUG Jug with levels marked for quantities of liquids or solids such as flour.
MEASURING SPOONS Set of spoons to measure amounts of ingredients, such as teaspoonful. mixing bowl Bowl for mixing ingredients.	MECHANISM A device for changing the direction and/or amount of movement.	MESHING The connecting of gear wheels as they come together.
MOTION Movement.	MOTOR A device which converts electrical energy into mechanical energy and can be used to drive a product.	
MOULD A pattern or template used to make a product to a required shape.	NEEDLES Range includes fine crewel needles, bodkins and tapestry needles.	OSCILLATE To move to and fro, like a clock pendulum.
OUTPUT What comes out of a system.	PALETTE KNIFE Blunt, flat-bladed knife for applying paint or for spreading in cookery.	PAN Range includes saucepans, frying pans, omelette pans and steamers
PAPER DRILL Hand tool for making holes in paper, card and corrugated plastic.	PASTRY CUTTERS Cutting discs, often with a fluted edge, for cutting out e.g. pastry for tarts, or scones.	PINCERS Hand tool with a cutting edge for wire or plastic.
PINS Stainless steel for holding material in place.	PIVOT Point which supports a lever or on which a beam will balance.	Pizza Tray Flat round baking tray.
Pliers Hand tool used to grip items.	PNEUMATICS Using air to transmit force over a distance to make actions take place.	PULLEY SYSTEM Arrangement of pulleys working together.
PUSH FIT A joint which holds together without glue.	QUILTING Stitching two layers of material together with a layer of padding between them.	RASP Type of rough file with rows of individual teeth
Reamer A pointed tool for making holes in plastic bottles,	RESISTANCE In an electrical circuit, the opposition to the current flowing through it.	ROTARY Movement in a circular direction.

RULER Tool for measuring a straight edge; safety rulers are advised when cutting with a sharp knife. SAFETY RULER Ruler with a raised centre and groove to guard fingers.	SAW Cutting tool; see also coping saw, junior hacksaw, shaper saw, tenon saw (safety warning).	SCALES Device for measuring weight.
SCISSORS Hand tool for cutting (safety warning).	SCORING To mark a line to make paper or card easier to fold.	SCREWDRIVER Hand tool for inserting and removing screws.
SENSOR Device which detects changes in its surroundings, such as light and dark, temperature or movement.	SERIES CIRCUIT A circuit with only one possible path for the current. Any switch in this type of circuit will affect all the components in it e.g. Christmas tree lights.	SET SQUARE Drawing instrument for drawing lines on paper and card at set angles, usually 30°, 45°, 60° and 90°.
SEWING TERMS: back-stitch Stitching where each stitch overlaps the previous one. blanket stitch Hemming stitch, particularly on the edge of blankets. cross-stitch Stitches which form a cross shape. running stitch Stitches which do not overlap. tacking stitch Light stitching to hold material in place. weaving Interlacing threads running in two directions.	TIE AND DYE Method of tying parts of a piece of cloth before dyeing so that patterns are achieved.	SHORT CIRCUIT An incorrect route taken by the current in a circuit, which misses out certain components and may cause the circuit to fail.
SIEVE Meshed device for sifting out different sizes of particles such as lumps in sugar.	SPANNER Hand tool for tightening and loosening bolts.	SPATULA Smooth-edged flat hand tool for smoothing cake fillings etc.
STAPLER Device for joining thin pieces of card or paper.	STORYBOARD The sequence of telling a story or planning the making.	STRUCTURE A framework made to contain or support something.
TENSION A force pulling on a material or structure.	THIMBLE Protective finger shield for sewing.	TONGS Holding device for used for picking up objects.
TRIANGULATION The use of triangular shapes to strengthen a structure, such as Jinks' corners.	WHISK Device for beating eggs, cream etc.	WIRE STRIPPERS Pliers used for stripping plastic coating from electrical wires.
WOODEN SPOON A spoon made from wood, used for mixing foods. e.g. creaming butter and sugar together.	ZESTER Tool for removing peel from citrus fruit.	

IMPLEMENTATION: SPIRITUAL MORAL SOCIAL AND CULTURAL DEVELOPMENT

Our DT Curriculum contributes to the spiritual, moral, social and cultural development of our children.

Spiritual Development	Moral Development	Social Development	Cultural Development
<ul style="list-style-type: none"> Respect for self and others Increasing ability to reflect Empathy, Concern & Compassion Expressive & creative development Awareness and understanding of their own and others feelings Ability to think in terms of the whole project Readiness to challenge and question Courage and persistence in the defence of their aims, values, principles, ideas and beliefs Appreciation of the intangible Understanding of feelings and emotions and their likely impact Respect for insight as well as knowledge and reason 	<ul style="list-style-type: none"> Ability to distinguish right from wrong Confidence to act consistently in accordance with their own principles Respect for others' needs, interests and feelings as well as their own Desire to explore their own and others' views A commitment to personal values in areas which are considered right by some and wrong by others Ability to make responsible and reasoned judgements on moral dilemmas Ability to think through consequences of their own and others' actions Considerate style of life Understanding of the need to review and reassess their values, codes and principles in the light of experience Moral and ethical impact of design on the environment 	<ul style="list-style-type: none"> Works successfully as a member of a group or team Appreciates the right and responsibilities of individuals within the wider social setting Participates in activities relevant to the community Exercises responsibility Resolves conflict Adjusts to a range of situations by appropriate and sensitive behaviour Challenges, when necessary and in appropriate ways Shares values and opinions with others Reflects on their own contribution to a project Relates well to other peoples' social skills and personal qualities Social impact of design on the environment 	<ul style="list-style-type: none"> Appreciation of the diversity and interdependence of cultures through design and engineering Ability to appreciate cultural diversity and accord dignity and respect to other people's values and beliefs, thereby challenging racism and valuing race equality Understanding of the influences in design which have shaped their own cultural heritage Sense of personal enrichment through encounter with cultural media and tradition from a range of cultures Regard for the rights of human achievement in all cultures and societies Openness to new ideas and a willingness to modify cultural values in the light of experience
<ul style="list-style-type: none"> All year groups will be introduced to famous designers and engineers through at least one of their topics. Where possible this should include an awareness of all races, cultures, gender 			

IMPLEMENTATION: ASSESSMENT

YEAR 1 BEGIN TO		YEAR 2 EMBED ABILITY TO	
DESIGNING			
UNDERSTANDING CONTEXTS, USERS AND PURPOSES	GENERATING, DEVELOPING, MODELLING AND COMMUNICATING IDEAS	UNDERSTANDING CONTEXTS, USERS AND PURPOSES	GENERATING, DEVELOPING, MODELLING AND COMMUNICATING IDEAS
Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment State what products they are designing and making Say whether their products are for themselves or other users Describe what their products are for Say how their products will work Say how they will make their products suitable for their intended users Use simple design criteria to help develop their ideas	Generate ideas by drawing on their own experiences Use knowledge of existing products to help come up with ideas Develop and communicate ideas by talking and drawing Model ideas by exploring materials, components and construction kits and by making templates and mockups Use information and communication technology, where appropriate, to develop and communicate their ideas	Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment State what products they are designing and making Say whether their products are for themselves or other users Describe what their products are for Say how their products will work Say how they will make their products suitable for their intended users Use simple design criteria to help develop their ideas	Generate ideas by drawing on their own experiences Use knowledge of existing products to help come up with ideas Develop and communicate ideas by talking and drawing Model ideas by exploring materials, components and construction kits and by making templates and mockups Use information and communication technology, where appropriate, to develop and communicate their ideas
MAKING			
PLANNING	PRACTICAL SKILLS AND TECHNIQUES	PLANNING	PRACTICAL SKILLS AND TECHNIQUES
Plan by suggesting what to do next Select from a range of tools and equipment, explaining their choices Select from a range of materials and components according to their characteristics	Follow procedures for safety and hygiene Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components Measure, mark out, cut and shape materials and components Assemble, join and combine materials and components Use finishing techniques, including those from art and design	Plan by suggesting what to do next Select from a range of tools and equipment, explaining their choices Select from a range of materials and components according to their characteristics	Follow procedures for safety and hygiene Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components Measure, mark out, cut and shape materials and components Assemble, join and combine materials and components Use finishing techniques, including those from art and design
EVALUATING			
OWN IDEAS AND PRODUCTS	EXISTING PRODUCTS	OWN IDEAS AND PRODUCTS	EXISTING PRODUCTS
Talk about their design ideas and what they are making Make simple judgements about their products and ideas against design criteria Suggest how their products could be improved	Explore: What products are Who products are for What products are for How products work How products are used Where products might be used What materials products are made from What they like and dislike about products	Talk about their design ideas and what they are making Make simple judgements about their products and ideas against design criteria Suggest how their products could be improved	Explore: What products are Who products are for What products are for How products work How products are used Where products might be used What materials products are made from What they like and dislike about products
TECHNICAL KNOWLEDGE			
MAKING PRODUCTS WORK		MAKING PRODUCTS WORK	
Know: About the simple working characteristics of materials and components About the movement of simple mechanisms such as levers, sliders, wheels and axles How freestanding structures can be made stronger, stiffer and more stable That a 3-D textiles product can be assembled from two identical fabric shapes That food ingredients should be combined according to their sensory characteristics The correct technical vocabulary for the projects they are undertaking		Know: About the simple working characteristics of materials and components About the movement of simple mechanisms such as levers, sliders, wheels and axles How freestanding structures can be made stronger, stiffer and more stable That a 3-D textiles product can be assembled from two identical fabric shapes That food ingredients should be combined according to their sensory characteristics The correct technical vocabulary for the projects they are undertaking	
COOKING AND NUTRITION			
WHERE FOOD COMES FROM	FOOD PREPARATION, COOKING AND NUTRITION	WHERE FOOD COMES FROM	FOOD PREPARATION, COOKING AND NUTRITION
Know: That all food comes from plants or animals That food has to be farmed, grown elsewhere (e.g. home) or caught	Know: How to name and sort foods into the five groups in The eatwell plate That everyone should eat at least five portions of fruit and vegetables every day How to prepare simple dishes safely and hygienically, without using a heat source How to use techniques such as cutting, peeling and grating	Know: That all food comes from plants or animals That food has to be farmed, grown elsewhere (e.g. home) or caught	Know: How to name and sort foods into the five groups in The eatwell plate That everyone should eat at least five portions of fruit and vegetables every day How to prepare simple dishes safely and hygienically, without using a heat source How to use techniques such as cutting, peeling and grating

YEAR 3 BEGIN TO		YEAR 4 EMBED ABILITY TO	
DESIGNING			
UNDERSTANDING CONTEXTS, USERS AND PURPOSES	GENERATING, DEVELOPING, MODELLING AND COMMUNICATING IDEAS	UNDERSTANDING CONTEXTS, USERS AND PURPOSES	GENERATING, DEVELOPING, MODELLING AND COMMUNICATING IDEAS
Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment Describe the purpose of their products Indicate the design features of their products that will appeal to intended users Explain how particular parts of their products work Gather information about the needs and wants of particular individuals and groups Develop their own design criteria and use these to inform their ideas	Share and clarify ideas through discussion Model their ideas using prototypes and pattern pieces Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas Use computer-aided design to develop and communicate their ideas Generate realistic ideas, focusing on the needs of the user Make design decisions that take account of the availability of resources	Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment Describe the purpose of their products Indicate the design features of their products that will appeal to intended users Explain how particular parts of their products work Gather information about the needs and wants of particular individuals and groups Develop their own design criteria and use these to inform their ideas	Share and clarify ideas through discussion Model their ideas using prototypes and pattern pieces Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas Use computer-aided design to develop and communicate their ideas Generate realistic ideas, focusing on the needs of the user Make design decisions that take account of the availability of resources
MAKING			
PLANNING	PRACTICAL SKILLS AND TECHNIQUES	PLANNING	PRACTICAL SKILLS AND TECHNIQUES
Select tools and equipment suitable for the task Explain their choice of tools and equipment in relation to the skills and techniques they will be using Select materials and components suitable for the task Explain their choice of materials and components according to functional properties and aesthetic qualities Order the main stages of making	Follow procedures for safety and hygiene Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components Measure, mark out, cut and shape materials and components with some accuracy Assemble, join and combine materials and components with some accuracy Apply a range of finishing techniques, including those from art and design, with some accuracy	Select tools and equipment suitable for the task Explain their choice of tools and equipment in relation to the skills and techniques they will be using Select materials and components suitable for the task Explain their choice of materials and components according to functional properties and aesthetic qualities Order the main stages of making	Follow procedures for safety and hygiene Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components Measure, mark out, cut and shape materials and components with some accuracy Assemble, join and combine materials and components with some accuracy Apply a range of finishing techniques, including those from art and design, with some accuracy
EVALUATING			
OWN IDEAS AND PRODUCTS	EXISTING PRODUCTS	OWN IDEAS AND PRODUCTS	EXISTING PRODUCTS
Identify the strengths and areas for development in their ideas and products Consider the views of others, including intended users, to improve their work Refer to their design criteria as they design and make Use their design criteria to evaluate their completed products	Investigate and analyse: How well products have been designed How well products have been made Why materials have been chosen What methods of construction have been used How well products work How well products achieve their purposes How well products meet user needs and wants Who designed and made the products Where products were designed and made When products were designed and made Whether products can be recycled or reused	Identify the strengths and areas for development in their ideas and products Consider the views of others, including intended users, to improve their work Refer to their design criteria as they design and make Use their design criteria to evaluate their completed products	Investigate and analyse: How well products have been designed How well products have been made Why materials have been chosen What methods of construction have been used How well products work How well products achieve their purposes How well products meet user needs and wants Who designed and made the products Where products were designed and made When products were designed and made Whether products can be recycled or reused
Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products			
TECHNICAL KNOWLEDGE			
MAKING PRODUCTS WORK: KNOW		MAKING PRODUCTS WORK: KNOW	
How to use learning from science to help design and make products that work How to use learning from mathematics to help design and make products that work That materials have both functional properties and aesthetic qualities That materials can be combined and mixed to create more useful characteristics That mechanical and electrical systems have an input, process and output The correct technical vocabulary for the projects they are undertaking How mechanical systems such as levers and linkages or pneumatic systems create movement How simple electrical circuits and components can be used to create functional products How to program a computer to control their products How to make strong, stiff shell structures That a single fabric shape can be used to make a 3D textiles product that food ingredients can be fresh, pre-cooked and processed		How to use learning from science to help design and make products that work How to use learning from mathematics to help design and make products that work That materials have both functional properties and aesthetic qualities That materials can be combined and mixed to create more useful characteristics That mechanical and electrical systems have an input, process and output The correct technical vocabulary for the projects they are undertaking How mechanical systems such as levers and linkages or pneumatic systems create movement How simple electrical circuits and components can be used to create functional products How to program a computer to control their products How to make strong, stiff shell structures That a single fabric shape can be used to make a 3D textiles product that food ingredients can be fresh, pre-cooked and processed	
COOKING AND NUTRITION			
WHERE FOOD COMES FROM: KNOW	FOOD PREPARATION, COOKING AND NUTRITION: KNOW	WHERE FOOD COMES FROM: KNOW	FOOD PREPARATION, COOKING AND NUTRITION: KNOW
That food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world	How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking That a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate That to be active and healthy, food and drink are needed to provide energy for the body	That food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world	How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking That a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate That to be active and healthy, food and drink are needed to provide energy for the body

YEAR 5 AS FOR YEAR 4 PLUS BEGIN TO		YEAR 6 AS FOR YEAR 5 PLUS EMBED ABILITY TO	
DESIGNING			
UNDERSTANDING CONTEXTS, USERS AND PURPOSES	GENERATING, DEVELOPING, MODELLING AND COMMUNICATING IDEAS	UNDERSTANDING CONTEXTS, USERS AND PURPOSES	GENERATING, DEVELOPING, MODELLING AND COMMUNICATING IDEAS
Carry out research, using surveys, interviews, questionnaires and web-based resources Identify the needs, wants, preferences and values of particular individuals and groups Develop a simple design specification to guide their thinking	Generate innovative ideas, drawing on research Make design decisions, taking account of constraints such as time, resources and cost	Carry out research, using surveys, interviews, questionnaires and web-based resources Identify the needs, wants, preferences and values of particular individuals and groups Develop a simple design specification to guide their thinking	Generate innovative ideas, drawing on research Make design decisions, taking account of constraints such as time, resources and cost
MAKING			
PLANNING	PRACTICAL SKILLS AND TECHNIQUES	PLANNING	PRACTICAL SKILLS AND TECHNIQUES
Produce appropriate lists of tools, equipment and materials that they need Formulate step-by-step plans as a guide to making	Accurately measure, mark out, cut and shape materials and components Accurately assemble, join and combine materials and components Accurately apply a range of finishing techniques, including those from art and design Use techniques that involve a number of steps Demonstrate resourcefulness when tackling practical problems	Produce appropriate lists of tools, equipment and materials that they need Formulate step-by-step plans as a guide to making	Accurately measure, mark out, cut and shape materials and components Accurately assemble, join and combine materials and components Accurately apply a range of finishing techniques, including those from art and design Use techniques that involve a number of steps Demonstrate resourcefulness when tackling practical problems
EVALUATING			
OWN IDEAS AND PRODUCTS	EXISTING PRODUCTS	OWN IDEAS AND PRODUCTS	EXISTING PRODUCTS
Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make Evaluate their ideas and products against their original design specification	Investigate and analyse: How much products cost to make How innovative products are How sustainable the materials in products are What impact products have beyond their intended purpose	Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make Evaluate their ideas and products against their original design specification	Investigate and analyse: How much products cost to make How innovative products are How sustainable the materials in products are What impact products have beyond their intended purpose
Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products			
TECHNICAL KNOWLEDGE			
MAKING PRODUCTS WORK		MAKING PRODUCTS WORK	
Know: How mechanical systems such as cams or pulleys or gears create movement How more complex electrical circuits and components can be used to create functional products How to program a computer to monitor changes in the environment and control their products How to reinforce and strengthen a 3D framework That a 3D textiles product can be made from a combination of fabric shapes That a recipe can be adapted by adding or substituting one or more ingredients		Know: How mechanical systems such as cams or pulleys or gears create movement How more complex electrical circuits and components can be used to create functional products How to program a computer to monitor changes in the environment and control their products How to reinforce and strengthen a 3D framework That a 3D textiles product can be made from a combination of fabric shapes That a recipe can be adapted by adding or substituting one or more ingredients	
COOKING AND NUTRITION			
WHERE FOOD COMES FROM	FOOD PREPARATION, COOKING AND NUTRITION	WHERE FOOD COMES FROM	FOOD PREPARATION, COOKING AND NUTRITION
That seasons may affect the food available How food is processed into ingredients that can be eaten or used in cooking	That recipes can be adapted to change the appearance, taste, texture and aroma That different food and drink contain different substances – nutrients, water and fibre – that are needed for health	That seasons may affect the food available How food is processed into ingredients that can be eaten or used in cooking	That recipes can be adapted to change the appearance, taste, texture and aroma That different food and drink contain different substances – nutrients, water and fibre – that are needed for health

IMPLEMENTATION: HEALTH & SAFETY AND SAFEGUARDING

Pupils are taught to work safely, use tools, equipment, materials, components and techniques appropriate to the task. Risk Assessments are carried out by the class teacher as part of the planning process. Support is taken from local authority guidelines, Be Safe handbook and DATA.

IMPLEMENTATION: STAFF DEVELOPMENT

Our school maintains the culture, training, partnerships and levels of resources necessary to ensure the continuous development of all aspects of our Citizen of the World Art curriculum

IMPACT

Our children:

- Develop the technical skills and specialist knowledge of how things work or need to be designed and built
- Develop the skills of
 - Problem solving.
 - Organisation. ...
 - Communication. ...
 - Creativity. ...
 - Business management. ...
 - Analytics. ...
 - Customer service.
- Actively contribute to the creativity, culture, wealth and well-being of themselves, their community and the country.
- Learn how to take risks and so become more resourceful, innovative, enterprising and capable



Citizen of the World Curriculum

Whilst you are in our school we will help you to learn to about:



Understanding the history, wisdom and future of these important parts of life will help you to become:



Stewards of our world who:

RELATE to people's place within the wider-world, their relationships with others, their histories, their presents and futures

CONNECT the local to the global

ADVOCATE interconnected, sustainable and thoughtful living

KNOW the value of the Arts and Culture to people and society