Design and Technology Progression Document

National Curriculum Objectives		
Early Years Foundation Stage (EYFS)	**Key Stage One**	**Key Stage Two**
Communication and Language **ELG: Listening, Attention and Understanding** • Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions. • Make comments about what they have heard and ask questions to clarify their understanding. **ELG: Speaking** • Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. • Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate. **Personal, Social and Emotional Development** **ELG: Self-Regulation** • Set and work towards simple goals, being able to wait for what they want and control their immediate impulses when appropriate. • Give focused attention to what the teacher says, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several ideas or actions.	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to: **Design** • Design purposeful, functional, appealing products for themselves and other users based on design criteria. • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. **Make** • Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to: **Design** • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. **Make** • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. • Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according

ELG: Managing Self • Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. **ELG: Building Relationships** • Show sensitivity to their own and to others' needs. **Physical Development** **ELG: Fine Motor Skills** • Use a range of small tools, including scissors, paint brushes and cutlery. • Begin to show accuracy and care when drawing. **Understanding the World** **ELG: Past and Present** • Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class. **ELG: The Natural World** • Explore the natural world around them, making observations and drawing pictures of animals and plants. **Expressive Arts and Design** **ELG: Creating with Materials** • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Share their creations, explaining the process they have used. • Make use of props and materials when role playing characters in narratives and stories.	**Evaluate** • Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria **Technical knowledge** • Build structures, exploring how they can be made stronger, stiffer and more stable. • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. **Food and Nutrition** • Use the basic principles of a healthy and varied diet to prepare dishes. • Understand where food comes from.	to their functional properties and aesthetic qualities. **Evaluate** • Investigate and analyse a range of existing products. • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. • Understand how key events and individuals in design and technology have helped shape the world. **Technical knowledge** • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control their products. **Food and Nutrition** • Understand and apply the principles of a healthy and varied diet • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Curriculum Overview (2021-2022)

Year Group	Title/ Unit of Study			
Foundation	**Cooking and Nutrition** **FS1:** Home corner – exploration of kitchen utensils and appliances Outdoor Mud Kitchen – using utensils, cooking vocabulary and a mud kitchen 'recipe book' **FS2:** Home corner – exploration of kitchen utensils, cooking equipment, spice jars and scales. **FS1:** Developing basic food preparation skills. E.g. peeling fruit, chopping soft fruit (such as bananas), mixing ingredients together and spreading using knives.	**Mechanisms** Use of construction kits to explore how things work and move, including: • Marble Run • Kids Knex • Mobilo • Popoids • Builder's Kit • Car garage (with moving parts)	**Exploring Materials and Tools** **Playdough area:** use of rolling pins, printers, shapes, cutters, cake cases, pizza cutters, recipe books (FS2), scissors, cutlery and extruders. **Craft/Creative area:** Junk modelling using a range of materials and resources such as: a range of scissors, hole punches, match sticks, lollipop sticks, collage materials, masking tape, straws, bottle tops, string, straws. **Outdoors** Builder's Hut including equipment such as: tape measure, trundle wheel, tools, cones and foam bricks.	**Structures** Use of construction kits to explore structures and materials, including: • Stickle bricks • Knex • Waffle blocks • Wooden blocks • Mobilo • Megablocks • Magnetics • Inter-star duplo **Outdoors** Crates and planks Water channels Den building
Year 1	**Cooking and Nutrition** 'Banquet Fit for A Healthy Queen' **Product:** Party finger food, including sandwiches.	**Mechanisms** Sliders and Levers **Product:** Moving Rocket Pictures		**Structures** Freestanding structures (joining and strengthening techniques) **Product:** Billy Goat's Gruff Bridge
Year 2	**Cooking and Nutrition** Preparing Fruits and Vegetables **Product:** Layered salad Science: 'Healthy Living' topic	**Mechanisms and Structures** Winding Mechanisms linked to science **Product:** Growing plant	**Textiles** Joining and decorating fabric **Product:** Hand Puppets	
Year 3	**Cooking and Nutrition** Healthy and Varied Diet – linked to India **Product:** Chapattis and Vegetarian curry	**Mechanisms** Pneumatics linked to Ancient Greeks **Product:** Greek Theatre		**Structures** Shell Structures using Computer Aided Design **Product:** Easter gift box
Year 4	**Cooking and Nutrition** Savoury party food **Product:** Cupcakes	**Mechanisms** Simple Circuits and Switches Electrical Systems **Product:** nightlight with simple switch Science: 'Electricity' topic	**Textiles** Bendy bags (basic sewing stiches) **Product:** Norman drawstring bag Computing: 'We are Designers'	

Year 5	**<u>Cooking and Nutrition</u>** Celebrating Culture and Seasonality: Soup **Product:** Tomato Soup	**<u>Mechanisms</u>** CAM mechanisms **Product:** Moving CAM toy	**<u>Textiles</u>** Combining different fabric shapes Using Computer Aided Design in Textiles **Product:** Fairtrade bags	
Year 6	**<u>Cooking and Nutrition</u>** Celebrating Culture and Seasonality **Product:** WWII stew and bread **Product:** WWII Stew (using seasonal vegetables)	**<u>Mechanisms</u>** Pulleys or Gears/ Electrical mechanisms **Product:** Rainforest Buggy Science: 'Electricity' topic		**<u>Structures</u>** Frame Structures **Product:** WW2 Shelter or linked to Year 6 Camp shelters.

Vocabulary Progression

Foundation	Cooking and Nutrition	Mechanisms	Textiles	Structures	Design, Make and Evaluate
Year 1	**Cooking and Nutrition** fruit and vegetable names; name of equipment and utensils (e.g. peeler, knife, juicer, grater, sieve); 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	**Mechanisms** slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards		**Structures** 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 and Evaluate** planning, investigating design, evaluate, make, user, purpose, ideas, product,
Year 2	**Cooking and Nutrition** fruit and vegetable names; name of equipment and utensils (e.g. peeler, knife, juicer, grater, sieve); 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	**Mechanisms** wheel, axle, axle holder, body, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used.	**Textiles** scissors, needle, thread, wool, names of all fabrics and components used, template, decorate, weave, print, cut, fold		**Design, Make and Evaluate** investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function
Year 3	**Food and Nutrition** name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell,	**Mechanisms** components, fixing, attaching, tubing, syringe, plunger, split pin, paper fastener pneumatic system, input movement, process,		**Structures** shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity,	**Design, Make and Evaluate** user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate,

	preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet	output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight linear, rotary, oscillating, reciprocating		marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, font, lettering, text, graphics, decision.	label, drawing, function, planning, design criteria, annotated sketch, appealing
Year 4	**Food and Nutrition** 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	**Mechanisms** 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 control, program, system, input device, output device	**Textiles** Running stitch, back stitch, innovative, prototype seam, seam allowance, reinforce, right side, wrong side, hem, template, pattern pieces names of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings		**Design, Make and Evaluate** evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations
Year 5	**Cooking and Nutrition** ingredients, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, blend, stir, pour, mix, crush, whisk.	**Mechanisms** cam, snail cam, off-centre cam, peg cam, pear shaped cam follower, axle, shaft, crank, handle, housing, framework rotation, rotary motion, oscillating motion, reciprocating motion annotated sketches, exploded diagrams mechanical system, input movement, process, output movement	**Textiles** Running stitch, back stitch, blanket stitch, embroidery, computer aided design (CAD), computer aided manufacture (CAM) font, lettering, text, graphics, scale, modify, repeat, copy, flip design brief, design criteria, design decisions, innovative, prototype seam, seam allowance, reinforce, hem, template, pattern pieces names of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper annotate, functionality,		**Design, Make and Evaluate** design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype

			innovation, authentic, user, purpose, evaluate, mock-up, prototype		
Year 6	**Cooking and Nutrition** ingredients, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble	**Mechanisms** pulley, rotation, spindle, driver, follower, ratio, 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		**Structures** Previous vocabulary taught and: frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent	**Design, Make and Evaluate** function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype

Progression of Skills

	EYFS	KS1	LKS2	UKS2
Design	• Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. • Set and work towards simple goals, being able to wait for what they want and control their immediate impulses when appropriate. • Give focused attention to what the teacher says, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several ideas or actions. • Begin to show accuracy and care when drawing.	**Understanding contexts, users and purposes** • 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. **Generating, developing, modelling and communicating 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.	**Understanding contexts, users and purposes** Across KS2 pupils should: • 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. In **early KS2** pupils should also: • Gather information about the needs and wants of particular individuals and groups. • Develop their own design criteria and use these to inform their ideas. **Generating, developing, modelling and communicating ideas** Across KS2 pupils should: • 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. In **early KS2** pupils should also: • Generate realistic ideas, focusing on the needs of the user.	**Understanding contexts, users and purposes** Across KS2 pupils should: • 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. In **late KS2** pupils should also: • 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. **Generating, developing, modelling and communicating ideas** Across KS2 pupils should: • 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. In **late KS2** pupils should also:

			• Make design decisions that take account of the availability of resources.	• Generate innovative ideas, drawing on research. • Make design decisions, taking account of constraints such as time, resources and cost.
Make	• Use a range of small tools, including scissors, paint brushes and cutlery. • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Give focused attention to what the teacher says, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several ideas or actions.	<u>Planning</u> Across KS1 pupils should: • 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. <u>Practical Skills and Techniques</u> Across KS1 pupils should: • 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.	<u>Planning</u> **Across KS2** pupils should: • 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. In **early KS2** pupils should also: • Order the main stages of making. <u>Practical Skills and Techniques</u> Across KS2 pupils should: • 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. In **early KS2** pupils should also: • 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	<u>Planning</u> **Across KS2** pupils should: • 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. In **late KS2** pupils should also: • Produce appropriate lists of tools, equipment and materials that they need. • Formulate step-by-step plans as a guide to making. <u>Practical Skills and Techniques</u> **Across KS2** pupils should: • 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. In **late KS2** pupils should also: • 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.
Evaluate	• Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class. • Show sensitivity to their own and to others' needs. • Share their creations, explaining the process they have used.	**Own Ideas and Products** **Across KS1** pupils should: • 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. **Existing Products** Across KS1 pupils should 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.	**Own Ideas and Products** **Across KS2** pupils should: • Identify the strengths and areas for development in their ideas and products. • Consider the views of others, including intended users, to improve their work. In **early KS2** pupils should also: • Refer to their design criteria as they design and make. • Use their design criteria to evaluate their completed products. **Existing Products** **Across KS2** pupils should 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. In **early KS2** pupils should also investigate and analyse: • 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.	**Own Ideas and Products** **Across KS2** pupils should: • Identify the strengths and areas for development in their ideas and products. • Consider the views of others, including intended users, to improve their work. In **late KS2** pupils should also: • 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. **Existing Products** **Across KS2** pupils should 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. In **late KS2** pupils should also 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.

			<u>Key Events and Individuals</u> **Across KS2** pupils should know: • About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.	<u>Key Events and Individuals</u> **Across KS2** pupils should know: • About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.
Technical Knowledge	• Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions. • Make comments about what they have heard and ask questions to clarify their understanding. • Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate.	<u>Making Products Work</u> **Across KS1** pupils should 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.	<u>Making Products Work</u> **Across KS2** pupils should 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. In **early KS2** pupils should also know: • 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 food ingredients can be fresh, pre-cooked and processed.	<u>Making Products Work</u> **Across KS2** pupils should 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. In **late KS2** pupils should also 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.

Food and Nutrition	• Use a range of small tools, including scissors, paint brushes and cutlery. • Explore the natural world around them, making observations and drawing pictures of animals and plants.	**Where Food Comes From** **Across KS1** pupils should know: • That all food comes from plants or animals. • That food has to be farmed, grown elsewhere (e.g. home) or caught. **Food Preparation, Cooking and Nutrition** **Across KS1** pupils should 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.	**Where Food Comes From** **Across KS2** pupils should 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. **Food Preparation, Cooking and Nutrition** **Across KS2** pupils should know: • 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. In **early KS2** pupils should also know: • 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.	**Where Food Comes From** **Across KS2** pupils should 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. In **late KS2** pupils should also know: • That seasons may affect the food available. • How food is processed into ingredients that can be eaten or used in cooking. **Food Preparation, Cooking and Nutrition** **Across KS2** pupils should know: • 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. In **late KS2** pupils should also know: • 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.

Design and Technology Planning Progression: YEAR ONE

FOOD AND NUTRITION

Previous Learning (EYFS)	Current Objectives	Next Learning Objectives (Year 2)
• Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell. • Experience of cutting soft fruit and vegetables using appropriate utensils.	**Product:** Children make their own sandwiches selecting their own fillings. They skills including: spreading, slicing, grating and cutting to prepare ingredients. **Design** • Design appealing products for a particular user based on simple design criteria. • Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. • Communicate these ideas through talk and drawings. **Make** • Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely (introduce to the 'bridge hold' and 'claw grip'. • Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. **Evaluate** • Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. • Evaluate ideas and finished products against design criteria, including intended user and purpose. **Technical knowledge and Understanding** • Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. • Understand how wheat is grown and used to make bread. • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The Eatwell Plate. • Know and use technical and sensory vocabulary relevant to the project.	**Product:** Layered Salad • Continue to develop food preparation skills, using utensils and equipment with greater skill and confidence. • Children should learn how to use the 'bridge hold' and 'claw grip' to chop fruits and vegetables with greater accuracy. • Children should explore a wider range of preparation skills linked to fruits and vegetables (grating, squeezing, coring, whisking, mixing, slicing) • Children should further develop their knowledge of how ingredients are grown, farmed or reared.

Design and Technology Planning Progression: YEAR ONE

MECHANISMS: Sliders and Levers

Previous Learning (EYFS)	Current Objectives	Next Learning Objectives (Y2)
• 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.	**Product:** Moving Picture linked English storytelling or topic theme using sliders and levers. **Designing** • 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. **Making** • 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. **Evaluating** • 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. **Technical knowledge and Understanding** • Explore and use sliders and levers. • Understand that different mechanisms produce different types of movement. • Know and use technical vocabulary relevant to the project.	**Mechanisms:** Exploring winding mechanisms (axels and pulleys) **Designing** • Generate initial ideas and simple design criteria through talking and using own experiences. • Develop and communicate ideas through drawings and mock-ups. **Making** • Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. • Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics. **Evaluating** • Explore and evaluate a range of products with axels and pulley mechanisms (e.g. winding toys). • Evaluate their ideas throughout and their products against original criteria. **Technical knowledge and Understanding** • Explore and use axles, axle holders and different types of pulley. • Distinguish between fixed and freely moving axles and pulleys. • Know and use technical vocabulary relevant to the project.

Design and Technology Planning Progression: YEAR ONE

STRUCTURES: Freestanding structures

Previous Learning (EYFS)	Current Objectives	Next Learning Objectives (Year 3)
• 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.	**Product:** A freestanding bridge linked to English traditional tales (The Three Billy Goat's Gruff). **Designing** • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Develop, model and communicate their ideas through talking, mock-ups and drawings. **Making** • Plan by suggesting what to do next. • Select and use tools, skills and techniques, explaining their choices. • Select new and reclaimed materials and construction kits to build their structures. • Use simple finishing techniques suitable for the structure they are creating. **Evaluating** • Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings. • Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. **Technical knowledge and Understanding** • Know how to make freestanding structures stronger, stiffer and more stable. • Know and use technical vocabulary relevant to the project.	**Structures:** Shell structures using Computer-Aided Design (packaging) **Designing** • Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product. • Develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas. **Making** • Plan the order of the main stages of making. • Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy. • Explain their choice of materials according to functional properties and aesthetic qualities. • Use computer-generated finishing techniques suitable for the product they are creating. **Evaluating** • Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used. • Test and evaluate their own products against design criteria and the intended user and purpose. **Technical knowledge and understanding** • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Develop and use knowledge of how to construct strong, stiff shell structures. • Know and use technical vocabulary relevant to the project.

Design and Technology Planning Progression: YEAR TWO

FOOD AND NUTRITION

Previous Learning (Year 1)	Current Objectives	Next Learning Objectives (Y3)
• Experience preparing soft fruit and vegetables using cutting and slicing skills ('bridge hold' and 'claw grip'). • Experience in using preparation skills including: spreading, grating and slicing to make a healthy sandwich. • Experience naming common fruits and vegetables and exploring the importance of these within a healthy, balanced diet, linked to the Eatwell Plate. • Experience of exploring how some food is grown, farmed and produced (some fruits, vegetables and wheat used for bread).	**Product:** A layered salad. **Designing** • Design appealing products for a particular user based on simple design criteria. • Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. • Communicate these ideas through talk, drawings and writing simple recipes. **Making** • Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely (using the 'bridge hold' and 'claw grip'). • Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. **Evaluating** • Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. • Evaluate ideas and finished products against design criteria, including intended user and purpose. **Technical knowledge and Understanding** • Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The eatwell plate.	**Product:** chapattis **Designing** • Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. **Making** • Plan the main stages of a recipe, listing ingredients, utensils and equipment. • Select and use appropriate utensils and equipment to prepare and combine ingredients. • Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. **Evaluating** • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. **Technical knowledge and understanding** • Know how to use appropriate equipment and utensils to prepare and combine food.

	• Know and use technical and sensory vocabulary relevant to the project.	• Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know and use relevant technical and sensory vocabulary appropriately.

Design and Technology Planning Progression: YEAR TWO

MECHANISMS: Winding Mechanisms (axels and pulleys)

Previous Learning (Year 1)	Current Objectives	Next Learning Objectives (Year 3)
• Assembled vehicles with moving wheels (axels) using construction kits. • Explored moving vehicles and moving toys 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. **Mechanisms (Year 1)** • Levers and Sliders (Moving Picture) **Structures (Year 1)** • Joining and strengthening techniques with card (freestanding structures)	**Product:** A winding mechanism linked to Science topic (plants). **Designing** • Generate initial ideas and simple design criteria through talking and using own experiences. • Develop and communicate ideas through drawings and mock-ups. **Making** • Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. • Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics. **Evaluating** • Explore and evaluate a range of products with axels and pulley mechanisms (e.g. winding toys). • Evaluate their ideas throughout and their products against original criteria. **Technical knowledge and Understanding** • Explore and use axles, axle holders and different types of pulley. • Distinguish between fixed and freely moving axles and pulleys. • Know and use technical vocabulary relevant to the project.	**Mechanisms:** Pneumatic (air powered) mechanisms. **Designing** • Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user. • Use annotated sketches and prototypes to develop, model and communicate ideas. **Making** • Order the main stages of making. • Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons. • Select from and use finishing techniques suitable for the product they are creating. **Evaluating** • Investigate and analyse books, videos and products with pneumatic mechanisms. • Evaluate their own products and ideas against criteria and user needs, as they design and make. **Technical knowledge and understanding** • Understand and use pneumatic mechanisms. • Know and use technical vocabulary relevant to the project

Design and Technology Planning Progression: YEAR TWO

TEXTILES: Templates and joining techniques

Previous Learning (EYFS)	Current Objectives (Year 2)	Next Learning Objectives (Year 4)
• Explored and used different fabrics. • Cut and joined fabrics with simple techniques. • Thought about the user and purpose of products.	**Product:** A glove puppet **Designing** • Design a functional and appealing product for a chosen user and purpose based on simple design criteria. • Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology. **Making** • Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. • Select from and use textiles according to their characteristics. **Evaluating** • Explore and evaluate a range of existing textile products relevant to the project being undertaken. • Evaluate their ideas throughout and their final products against original design criteria. **Technical knowledge and understanding** • Understand how simple 3-D textile products are made, using a template to create two identical shapes. • Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.	**Product:** Norman drawstring bag **Designing** • Generate realistic ideas, focusing on the needs of the user. • Model their ideas using prototypes and pattern pieces. • Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. • Make design decisions that take account of the availability of resources. **Making** • Produce detailed lists of equipment and fabrics relevant to their tasks. • Order the main stages of making. • Use templates to cut fabric with accuracy. • Assemble and join materials using sewing stitches including: running stitch and back stitch. • Apply a range of finishing techniques, including those from art and design, with some accuracy. **Evaluating** • Investigate and analyse textile products linked to their final product. • Compare the final product to the original design specification. • Test products with intended user, where safe and practical, and critically evaluate the quality

	• Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. • Know and use technical vocabulary relevant to the project.	of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work. **Technical knowledge and understanding** • A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate. • Zips, buttons and drawstrings can be used to adapt the functionality of the product.

Design and Technology Planning Progression: YEAR THREE

FOOD AND NUTRITION

Previous Learning (Year 2)	Current Objectives (Year 3)	Next Learning Objectives (Year 4)
• Know some ways to prepare ingredients safely and hygienically. • Have some basic knowledge and understanding about healthy eating and The Eatwell Plate. • Developed knowledge of different fruits and vegetables and how these can be grown or farmed. • Have some experience of using some simple utensils and equipment to: peel, cut, slice, squeeze, grate and chop safely (being introduced to the 'bridge hold' and 'claw grip'). **Products** **Year 1:** A healthy sandwich. **Year 2:** A layered salad.	**Product:** Chapattis linked to topic on 'India'. **Designing** • Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. **Making** • Plan the main stages of a recipe, listing ingredients, utensils and equipment. • Select and use appropriate utensils and equipment to prepare and combine ingredients. • Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Use digital scales to measure ingredients with increasing accuracy. • Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. **Evaluating** • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. **Technical knowledge and understanding** • Know how to use appropriate equipment and utensils to prepare and combine food. • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know and use relevant technical and sensory vocabulary appropriately.	**Product:** Cupcakes • Continue to build on knowledge of reading, following and adapting recipes, identifying ingredients, utensils and equipment needed. • Develop confidence in using utensils and equipment to prepare ingredients (including 'the bridge hold' and 'claw grip' when chopping ingredients). • Develop confidence in using digital and analogue scales to accurately measure ingredients. • Develop knowledge of food hygiene and safety when using heat sources and cooking equipment. • Continue to build on the knowledge gained from the previous years about how to maintain a healthy and balanced diet, linking to the Eatwell Plate. • Continue to develop knowledge of where food comes from: grown, caught, reared or processed.

Design and Technology Planning Progression: YEAR THREE

MECHANISMS: Pneumatics

Previous Learning (Year 2)	Current Objectives (Year 3)	Next Learning Objectives (Year 4)
• Explored simple mechanisms, such as sliders and levers, and simple structures. • Learnt how materials can be joined to allow movement. • Joined and combined materials using simple tools and techniques. **Year 1:** Levers and sliders. **Year 2:** Winding Mechanisms (axels and pulleys). **Year 1:** Freestanding structures (joining techniques to build strength and stability).	**Product:** Greek theatre using a pneumatic mechanism **Designing** • Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user. • Use annotated sketches and prototypes to develop, model and communicate ideas. **Making** • Order the main stages of making. • Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons. • Select from and use finishing techniques suitable for the product they are creating. **Evaluating** • Investigate and analyse books, videos and products with pneumatic mechanisms. • Evaluate their own products and ideas against criteria and user needs, as they design and make. **Technical knowledge and understanding** • Understand and use pneumatic mechanisms. • Know and use technical vocabulary relevant to the project	**Mechanisms (electrical systems)** **Product:** Night light with a hand-made switch **Designing** • Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. **Making** • Order the main stages of making. • Select from and use tools and equipment to cut, shape, join and finish with some accuracy. • Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities. **Evaluating** • Investigate and analyse a range of existing battery-powered products and switch designs. • Investigate different hand-made switches, using appropriate materials and designs. • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. **Technical knowledge and understanding** • Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. • Apply their understanding of computing to program and control their products. • Know and use technical vocabulary relevant to the project.

Design and Technology Planning Progression: YEAR THREE

STRUCTURES: Shell structures (with use of Computer Aided Design)

Previous Learning (Year 2)	Current Objectives (Year 3)	Next Learning Objectives (Year 6)
• 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. • Familiarity with general purpose software that can be used to draw accurate shapes, such as Microsoft Word (link to Computing) **Structures (Year 1)** Freestanding Bridge – Billy Goat's Gruff (joining techniques)	**Product:** Easter gift packaging. **Designing** • Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product. • Develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas. **Making** • Plan the order of the main stages of making. • Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy. • Explain their choice of materials according to functional properties and aesthetic qualities. • Use computer-generated finishing techniques suitable for the product they are creating. **Evaluating** • Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used. • Test and evaluate their own products against design criteria and the intended user and purpose. **Technical knowledge and understanding** • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Develop and use knowledge of how to construct strong, stiff shell structures. • Know and use technical vocabulary relevant to the project.	**Product:** World War II shelter or camping shelter **Designing** • Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. • Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. **Making** • Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. • Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. • Use finishing and decorative techniques suitable for the product they are designing and making. **Evaluating** • Investigate and evaluate a range of existing frame structures. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. • Research key events and individuals relevant to frame structures. **Technical knowledge and understanding** • Understand how to strengthen, stiffen and reinforce 3-D frameworks. • Know and use technical vocabulary relevant to the project.

Design and Technology Planning Progression: YEAR FOUR

FOOD AND NUTRITION

Previous Learning (Year 3)	Current Objectives (Year 4)	Next Learning Objectives (Year 5)
• Experience of using utensils and equipment to: cut, slice, grate, mix, knead, roll and fold ingredients to make chapattis. • Experience of tasting different ingredients and evaluating the sensory characteristics (i.e. smell, taste, texture, appearance). • Experience of following a simple recipe, making small alterations to the ingredients or method (innovation). • Exploration of the Eatwell Plate and food groups contributing to a healthy and balanced diet (following on from the introduction to this in Year One and Two). • Opportunity to learn about food hygiene and safety in the kitchen. **Products** **Year 1:** A healthy sandwich. **Year 2:** A layered salad. **Year 3:** Chapattis	**Product:** cupcakes **Designing** • Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. **Making** • Plan the main stages of a recipe, listing ingredients, utensils and equipment. • Select and use appropriate utensils and equipment to prepare and combine ingredients. • Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Using electronic or analogue scales to measure ingredients with greater accuracy. • Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. **Evaluating** • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. **Technical knowledge and understanding** • Know how to use appropriate equipment and utensils to prepare and combine food. • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.	**Product:** Tomato Soup using seasonal ingredients **Designing** • Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. • Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. • Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. **Making** • Write a step-by-step recipe, including a list of ingredients, equipment and utensils. • Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. • Use preparation skills with greater skill, including the 'bridge hold' and 'claw grip' when chopping ingredients. • Make, decorate and present the food product appropriately for the intended user and purpose. **Evaluating** • Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. • Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. • Understand how key chefs have influenced eating habits to promote varied and healthy diets. **Technical knowledge and understanding**

	• Know and use relevant technical and sensory vocabulary appropriately.	• Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products (grown, reared or processed).

Design and Technology Planning Progression: YEAR FOUR

TEXTILES (Using Fabric Templates and developing sewing skills)

Previous Learning	Current Objectives (Year 4)	Next Learning Objectives (Year 5)
• Experience of stitching, joining and finishing techniques in textiles. • Experience of making and using textiles pattern pieces. • Experience of simple computer-aided design applications (**Year 3** Packaging Topic – using Microsoft Word). **Products** **Year 2:** Hand Puppets (joining fabric techniques)	**Product:** Norman drawstring bag **Designing** • Generate realistic ideas, focusing on the needs of the user. • Model their ideas using prototypes and pattern pieces. • Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. • Make design decisions that take account of the availability of resources. **Making** • Produce detailed lists of equipment and fabrics relevant to their tasks. • Order the main stages of making. • Use templates to cut fabric with accuracy. • Assemble and join materials using sewing stitches including: running stitch and back stitch. • Apply a range of finishing techniques, including those from art and design, with some accuracy **Evaluating** • Investigate and analyse textile products linked to their final product. • Compare the final product to the original design specification. • Test products with intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.	**Product:** Fairtrade Bag (CAD – logo/design using transfer paper). **Designing** • Generate innovative ideas through research including surveys, interviews and questionnaires. • Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes including using computer-aided design. • Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. **Making** • Produce detailed lists of equipment and fabrics relevant to their tasks. • Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment, including CAD, to make products that are accurately assembled and well finished. • Work within the constraints of time, resources and cost. **Evaluating** • Investigate and analyse textile products linked to their final product. • Compare the final product to the original design specification. • Test products with intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.

	• Consider the views of others to improve their work. **Technical knowledge and understanding** • A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate. • Zips, buttons and drawstrings can be used to adapt the functionality of the product.	• Consider the views of others to improve their work. **Technical knowledge and understanding** • A variety of fabric joining and sewing techniques are used with greater confidence: -running stitch, back stitch, blanket stitch (extending to cross stitch and additional embroidery techniques). • Additional textile techniques (such as attaching zips, buttons and drawstrings) are used with greater precision. • A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate.

Design and Technology Planning Progression: YEAR FOUR		
MECHANISMS: Electrical systems (simple circuits and switches)		
Previous Learning	**Current Objectives (Year 4)**	**Next Learning Objectives (Year 6)**
• 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. **Link to Year 4 Science Topic (Electricity)** **Previous learning on mechanisms:** **Year 1:** Levers and Sliders. **Year 2:** Winding Mechanisms (axels and pulleys). **Year 3:** Pneumatic Mechanisms	**Product:** Night Light with a hand-made switch **Designing** • Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. **Making** • Order the main stages of making. • Select from and use tools and equipment to cut, shape, join and finish with some accuracy. • Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities. **Evaluating**	**Product:** Electronic Rainforest Buggy, using pulleys. **Designing** • Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide their thinking. • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. **Making** • Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. • Work within the constraints of time, resources and cost.

	• Investigate and analyse a range of existing battery-powered products and switch designs. • Investigate different hand-made switches, using appropriate materials and designs. • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. **Technical knowledge and understanding** • Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. • Apply their understanding of computing to program and control their products. • Know and use technical vocabulary relevant to the project.	**Evaluating** • Compare the final product to the original design specification. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work. • Investigate famous manufacturing and engineering companies relevant to the project. **Technical knowledge and understanding** • Understand that mechanical and electrical systems have an input, process and an output. • Understand how to create working electrical circuits using a motor and hand-made switch. • Understand how pulleys can be used to speed up, slow down or change the direction of movement. • Know and use technical vocabulary relevant to the project.

Design and Technology Planning Progression: YEAR FIVE

FOOD AND NUTRITION

Previous Learning	Current Objectives (Year 5)	Next Learning Objectives (Year 6)
• Have knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet. Children will have previously explored the 'Eatwell Plate' and should be able to name the main food groups that make a healthy and balanced diet. • Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients. • Have experience if exploring where ingredients are produced: grown, farmed or reared. **Previous Products:** **Year 1:** Afternoon Tea – sandwiches **Year 2:** Layered salad **Year 3:** Chapattis **Year 4:** Cupcakes	**Product:** Tomato Soup using seasonal ingredients **Designing** • Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. • Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. • Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. **Making** • Write a step-by-step recipe, including a list of ingredients, equipment and utensils. • Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. • Use preparation skills with greater skill, including the 'bridge hold' and 'claw grip' when chopping ingredients. • Make, decorate and present the food product appropriately for the intended user and purpose. **Evaluating** • Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. • Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. • Understand how key chefs have influenced eating habits to promote varied and healthy diets. **Technical knowledge and understanding**	**Year 6: World War II stew and bread using seasonal ingredients.** • Continue to develop understanding of seasonality and how ingredients are produced or processed. • Use preparation skills for savoury dishes with greater skill and accuracy. • Have opportunities to innovate and adapt recipes, thinking about the user when designing their product. • Continue to develop knowledge of food hygiene, linked to Microorganisms and cross contamination (Science Topic). • Continue to develop knowledge of healthy and balanced diets, understanding food groups on the Eatwell Plate and role of nutrients and water for the body. Explore food labelling and packaging and how this can inform people's decision-making.

	• Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products (grown, reared or processed). • That different food and drink contain different substances – nutrients, water and fibre – that are needed for health.	

Design and Technology Planning Progression: YEAR FIVE		
MECHANISMS: CAM systems		
Previous Learning	**Current Objectives (Year 5)**	**Next Learning Objectives (Year 6)**
• Experience of axles, axle holders and wheels that are fixed or free moving (**Year 2** – winding mechanisms using pulleys) • Basic understanding of different types of movement. **Year 1:** levers and sliders **Year 2:** winding mechanisms (pulleys) **Year 3:** pneumatic mechanisms (movement using air power) **Year 4:** electrical mechanisms • 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. **Year 1:** freestanding structures (strengthening techniques). **Year 3:** Shell structures (packaging).	**Product:** CAM toy **Designing** • Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide their thinking. • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. **Making** • Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. • Work within the constraints of time, resources and cost. **Evaluating** • Compare the final product to the original design specification. • Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work.	**Year 6:** Electrical Mechanisms using pulley systems **Designing** • Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide their thinking. • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. **Making** • Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. • Work within the constraints of time, resources and cost. **Evaluating** • Compare the final product to the original design specification. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work.

	• Investigate famous manufacturing and engineering companies relevant to the project. **Technical knowledge and understanding** • Understand that mechanical systems have an input, process and an output. • Understand how cams can be used to produce different types of movement and change the direction of movement. • Know and use technical vocabulary relevant to the project.	• Investigate famous manufacturing and engineering companies relevant to the project. **Technical knowledge and understanding** • Understand that mechanical and electrical systems have an input, process and an output. • Understand how to create working electrical circuits using a motor and hand-made switch. • Understand how pulleys can be used to speed up, slow down or change the direction of movement. • Know and use technical vocabulary relevant to the project.

Design and Technology Planning Progression: YEAR FIVE TEXTILES: Using Computer-Aided Design		
Previous Learning	**Current Objectives (Year 5)**	**Next Learning Objectives (KS3)**
• Experience of stitching, joining and finishing techniques in textiles. • Experience of making and using textiles pattern pieces. **Year 2**: Hand Puppets (fabric joining techniques) **Year 4:** Norman Bags (running stitch, back stitch, drawstrings and buttons). • Experience of simple computer-aided design applications. **Year 3:** Shell structures (packaging)	**Product:** Fairtrade Bag (CAD – logo/design using transfer paper). **Designing** • Generate innovative ideas through research including surveys, interviews and questionnaires. • Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes including using computer-aided design. • Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. **Making** • Produce detailed lists of equipment and fabrics relevant to their tasks. • Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment, including CAD, to make products that are accurately assembled and well finished.	• Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools. • Analyse the work of past and present professionals and others to develop and broaden their understanding. • Investigate new and emerging technologies. • Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups. • Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture. • Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties.

	• Work within the constraints of time, resources and cost. **Evaluating** • Investigate and analyse textile products linked to their final product. • Compare the final product to the original design specification. • Test products with intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work. **Technical knowledge and understanding** • A variety of fabric joining and sewing techniques are used with greater confidence: -running stitch, back stitch, blanket stitch (extending to cross stitch and additional embroidery techniques). • Additional textile techniques (such as attaching zips, buttons and drawstrings) are used with greater precision. • A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate.	

Design and Technology Planning Progression: YEAR SIX

FOOD AND NUTRITION

Previous Learning	Current Objectives (Year 5)	Next Learning Objectives (KS3)
• Have knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet. Children will have previously explored the 'Eatwell Plate' and should be able to name the main food groups that make a healthy and balanced diet. • Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients. • Have experience of adapting a recipe (innovation). Children will have explored existing products and used their sensory evaluations to make changes to an existing recipe (Year 5). • Have experience in discovering where food comes from (grown, farmed or reared). **Previous Products:** **Year 1:** Afternoon Tea – sandwiches **Year 2:** Layered salad **Year 3:** Chapattis **Year 4:** Cupcakes **Year 5:** Tomato Soup (seasonal ingredients)	**Product:** World War II Stew and Bread (innovation). **Designing** • Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. • Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. • Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. **Making** • Write a step-by-step recipe, including a list of ingredients, equipment and utensils. • Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. • Use preparation skills with greater skill, including the 'bridge hold' and 'claw grip' when chopping ingredients. • Make, decorate and present the food product appropriately for the intended user and purpose. **Evaluating** • Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. • Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. • Understand how key chefs have influenced eating habits to promote varied and healthy diets. **Technical knowledge and understanding** • Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products (grown, reared or processed).	• Understand and apply the principles of nutrition and health. • Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet. • Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]. • Understand the source, seasonality and characteristics of a broad range of ingredients.

Design and Technology Planning Progression: YEAR SIX

MECHANISMS: Pulleys using an electrical system

Previous Learning	Current Objectives (Year 5)	Next Learning Objectives (KS3)
• Experience of axles, axle holders and wheels that are fixed or free moving (**Year 2** – winding mechanisms using pulleys) • Basic understanding of different types of movement. **Year 1:** levers and sliders **Year 2:** winding mechanisms (pulleys) **Year 3:** pneumatic mechanisms (movement using air power) **Year 4:** electrical mechanisms **Year 5:** CAM mechanisms • 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. **Year 1:** freestanding structures (strengthening techniques). **Year 3:** Shell structures (packaging).	**Product:** Electronic Rainforest Buggy **Designing** • Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide their thinking. • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. **Making** • Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. • Work within the constraints of time, resources and cost. **Evaluating** • Compare the final product to the original design specification. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work. • Investigate famous manufacturing and engineering companies relevant to the project. **Technical knowledge and understanding** • Understand that mechanical and electrical systems have an input, process and an output. • Understand how to create working electrical circuits using a motor and hand-made switch. • Understand how pulleys can be used to speed up, slow down or change the direction of movement. • Know and use technical vocabulary relevant to the project.	• Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools. • Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties. • Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups. • Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists. • Understand how more advanced mechanical systems used in their products enable changes in movement and force • Understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs]

Design and Technology Planning Progression: YEAR SIX

STRUCTURES:

Previous Learning	Current Objectives (Year 5)	Next Learning Objectives (KS3)
• 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. • Experience of cutting and joining techniques with a range of materials including card, plastic and wood. **Year 1:** freestanding structures (strengthening techniques). **Year 3:** Shell structures (packaging – measuring and cutting with accuracy)	**Product:** World War II shelter or camping shelter **Designing** • Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. • Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. **Making** • Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. • Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. • Use finishing and decorative techniques suitable for the product they are designing and making. **Evaluating** • Investigate and evaluate a range of existing frame structures. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. • Research key events and individuals relevant to frame structures. **Technical knowledge and understanding** • Understand how to strengthen, stiffen and reinforce 3-D frameworks. • Know and use technical vocabulary relevant to the project.	• Use research and exploration, such as the study of different cultures, to identify and understand user needs. • Identify and solve their own design problems and understand how to reformulate problems given to them. • Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations. • Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture. • Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties. • Analyse the work of past and present professionals and others to develop and broaden their understanding. • Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions