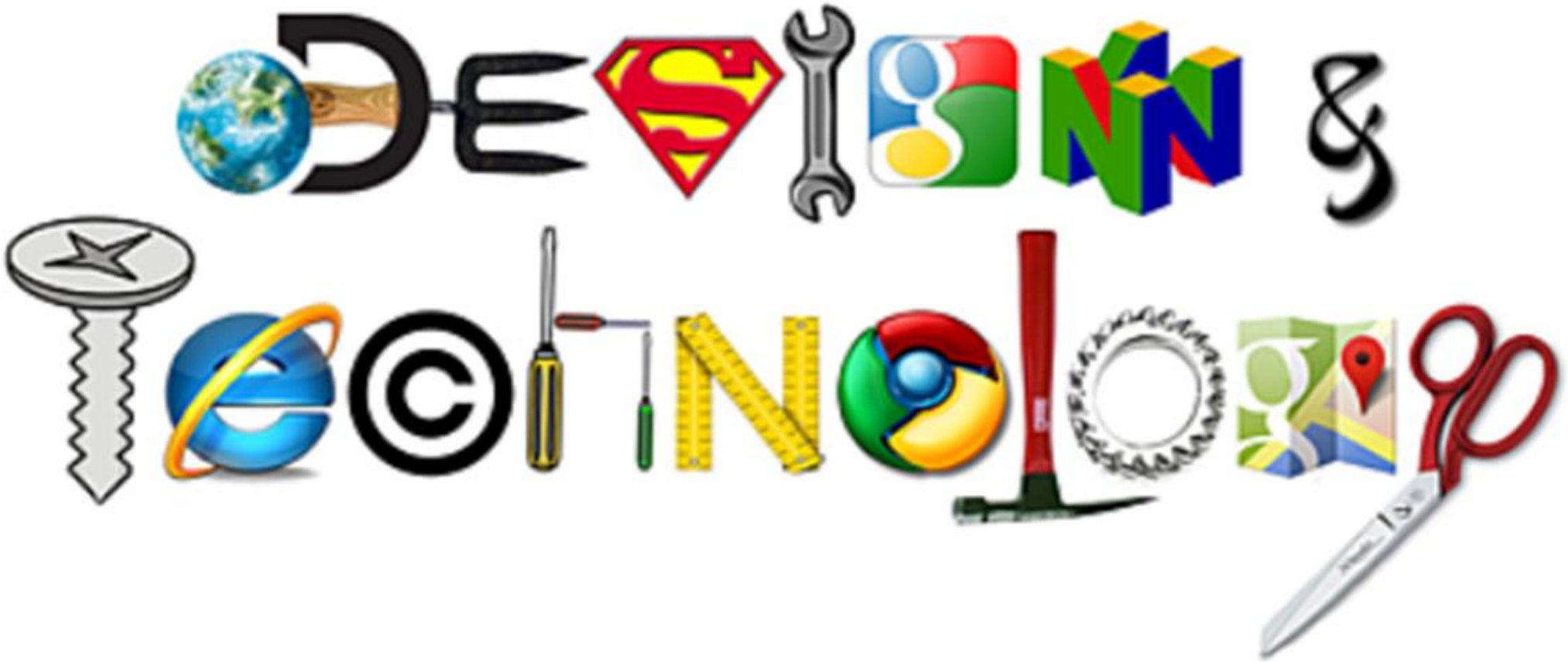
Curriculum
D&T – Whole School



Curriculum
Design and Technology Rationale

Intent:	At Wilbraham Primary School, we intend to provide an inspiring, practical and relevant Design and Technology Curriculum. We give each pupil a chance to believe in themselves as designers and engineers and encourage resilience, perseverance and an acceptance that mistakes are an important part of learning. We promote the importance of hard work to build success and the development of a growth mindset. We encourage the children to improve their designs and existing products to achieve their best possible work. We provide children with a secure grasp of the skills needed to design and create successful products which can be used by their target user and to take home a product that they are proud of.
Implementation:	To ensure high standards of teaching and learning in Design and Technology, we implement a curriculum that is progressive throughout the whole school. Design and Technology is taught as part of a cross-curricular half-termly topic, focusing on the knowledge and skills stated in the National Curriculum. At Wilbraham, we currently use the 'Projects on a Page' Scheme from the Design and Technology Association. This scheme compliments the National Curriculum and provides clear skills and objectives. Each year group (Y1- Y5) has 3 projects to complete throughout the year (Y6 has 2 projects to complete) which allow the children to gain a wide range of skills. These include: mechanisms, structures, electrical products, textiles and food preparation. Each project follows a clear process: research, design, make and evaluate. Work is recorded in DT books which follow the children throughout their school journey and some final products are displayed in classrooms.
Impact:	Within Design and Technology, we aim to encourage children to become problem-solvers, both as individuals and as part of a team. We aspire that pupils will have gained knowledge and understanding of different skills and techniques required to solve problems by designing and creating a variety of products using a safe approach. Our carefully-planned curriculum allows the children to reflect on and evaluate present and past design and technology, its uses and its impact. Children learn to be passionate and excited by the designing and making of products including working with, preparing and tasting food. Children will be equipped with skills and knowledge that will enable them to be ready for the curriculum at Key Stage 3 and for life as a capable citizen in the wider world.

Curriculum Map
Design and Technology – EYFS

EYFS

	Physical Development Children in the early years will:	Expressive Arts and Design Children in the early years will:	Vocabulary
Nursery	• select and use activities and resources, with help when needed. • practise using large-muscle movements to wave flags and streamers, paint and make marks. • learn to choose the right resources to carry out their own plan • practise using one-handed tools and equipment, for example, making snips in paper with scissors.	• be given opportunities to explore how things work. • have opportunities to make imaginative and complex 'small worlds' with blocks and construction kits. • explore different materials freely, in order to develop their ideas about how to use them and what to make. • develop their own ideas and then decide which materials to use to express them. • learn to create closed shapes with continuous lines, and begin to use these shapes to represent objects.	Twist Wrap Weave Materials Texture Create Colours Gluing/Sticking Artwork Imagination Fabric
Reception	• progress towards a more fluent style of moving, with developing control and grace. • develop their small motor skills so that they can use a range of tools competently, safely and confidently. • use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.	• explore, use and refine a variety of artistic effects to express their ideas and feelings. • return to and build on their previous learning, refining ideas and developing their ability to represent them. • create collaboratively, sharing ideas, resources and skills.	
What this will look like in EYFS:	Children will… • Share creations, exploring the process they have used. • Make use of props and materials whilst playing / role playing characters in narratives and stories. • Safely use and explore a variety of materials, tools and techniques, experimenting with design, colour, texture, form and function. • Have the opportunity to taste food from around the world and express their opinion. • Practise simple food preparation skills e.g cutting, spreading, grating • Access a junk modelling area to make their own models and explore joining techniques.		

Curriculum Map
Design and Technology – Whole School

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y1	**Mechanisms** Sliders and levers		**Structures** Freestanding structures		**Food and Nutrition** Preparing fruit and vegetables (inc. cooking and nutrition requirements for KS1)	
Y2	**Mechanisms** Wheels and axles		**Food and Nutrition** Preparing fruit and vegetables (inc. cooking and nutrition requirements for KS1)			**Textiles** Templates and joining techniques
Y3	**Mechanisms** Levers and linkages		**Textiles** 2D shape to 3D product		**Food and Nutrition** Healthy and varied diet (inc. cooking and nutrition requirements for KS2)	

Curriculum Map
Design and Technology – Whole School

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y4		**Food and Nutrition** Healthy and varied diet (inc. cooking and nutrition requirements for KS2)		**Structures** Shell structures using computer - aided design		**Electrical Systems** Simple circuits and switches
Y5		**Structures** Frame Structures		**Mechanical Systems** Cams		**Food and Nutrition** Celebrating culture and seasonality (inc. cooking and nutrition requirements for KS2)
Y6		**Electrical Systems** Complex switches and circuits				**Food and Nutrition** Celebrating culture and seasonality (inc. cooking and nutrition requirements for KS2)

Curriculum Map
Design and Technology – Overview Y1

Autumn Term Mechanisms (Sliders and levers)	Spring Term Structures (Freestanding structures)	Summer Term Food and Nutrition
Moving Pictures	**Houses**	**Fruit Kebabs**
Investigate - Pupils will explore a range of existing books and everyday products that use simple sliders and levers **Focused tasks** - Pupils will explore and use sliders and levers and learn how different mechanisms produce different types of movement. **Design** - Pupils will generate ideas based on a simple design criteria and their own experiences, explaining what they could make. They will develop, model and communicate their ideas through drawings and mock-ups with card and paper. **Make** - Pupils will plan by suggesting what to do next. They will select and use tools, explaining their choices, to cut, shape and join paper and card. They will use simple finishing techniques suitable for the product they are creating. **Evaluate** - Pupils will evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.	**Investigate** - Pupils will explore a range of existing freestanding structures in the school and the local environment e.g. everyday products and buildings. **Focused tasks** - Pupils will develop, model and communicate their ideas through talking, mock-ups and drawings. They will select from new and reclaimed materials and construction kits to practise building structures. **Design** - Pupils will generate ideas based on a simple design criteria and their own experiences, explaining what they could make. They will develop, model and communicate their ideas through talking, mock-ups and drawings. **Make** - Pupils will plan by suggesting what to do next. They will select from new and reclaimed materials/construction kits to build their structures. They will use simple finishing techniques suitable for the structure they are creating. **Evaluate** - Pupils will evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.	**Investigate** - Pupils will taste and evaluate a range of fruit to determine the intended user's preferences. **Focused tasks** - Pupils will practise following simple hygiene/health and safety procedures. They will practise using simple tools safely and learn various food processing techniques. **Design** - Pupils will design appealing products for a particular user based on a simple design criteria. They will generate their initial ideas and design criteria through investigating a variety of fruit and vegetables and communicate these ideas through talk and drawings. **Make** - Pupils will use simple utensils and equipment to e.g. peel, cut, slice and chop safely. They will select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. **Evaluate** - Pupils will evaluate ideas and finished products against design criteria, including intended user and purpose.
Key Vocabulary: slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards, design, make, evaluate, user, purpose, ideas, design criteria, product, function.	**Key Vocabulary:** cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder, design, make, evaluate, user, purpose, ideas, design criteria, product, function.	**Key vocabulary:** fruit and vegetable names, names of equipment and utensils, sensory vocabulary (e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour) hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria.

Curriculum Map
Design and Technology – Endpoints Y1

By the end of Y1

Structures	Mechanisms
Designing Know how to generate ideas based on a simple design criteria and their own experiences. Know how to develop, model and communicate their ideas through talking. **Making** Know how to plan what to do next. Know how to select and use tools, skills and techniques, explaining their choices. Know how to use construction kits to build their structure. Know how to use simple finishing techniques for the structure they are creating. **Evaluating** Know how to explore a range of existing freestanding structures in school and the local environment. Know how to evaluate their product by discussing how well it works in relation to its 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.	**Designing** Know how to generate ideas based on simple design criteria and their own experiences, explaining what they could make. Know how to develop, model and communicate their ideas through drawings and mock-ups with card and paper. **Making** Know how to plan by suggesting what to do next. Know how to select and use tools, explaining their choices, to cut, shape and join paper and card. Know how to use simple finishing techniques suitable for the product they are creating. **Evaluating** Know how to explore a range of existing books and everyday products that use simple sliders and levers. Know how to 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** Know how to explore and use sliders and levers. Know that different mechanisms produce different types of movement. Know and use technical vocabulary relevant to the project.

Curriculum Map
Design and Technology – Overview Y2

Autumn Term Mechanisms (Wheels and axles)	Spring Term Food and Nutrition	Summer Term Textiles
Moving Vehicles	**Sandwiches**	**Finger/Hand Puppets**
Investigate - Pupils will explore and evaluate a range of products with wheels and axles. **Focused tasks** - Pupils will learn how different types of axles and wheels work. They will develop and communicate ideas through drawings and mock-ups. **Design** - Pupils will generate initial ideas and simple design criteria through talking and using their own experiences. They will develop and communicate ideas through drawings and mock-ups. They will use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. **Make** - Pupils will learn how to mark out, hold, cut and join materials and components correctly. They will select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics. **Evaluate** - Pupils will evaluate their ideas throughout and their products against original criteria.	**Investigate** - Pupils will taste and evaluate sandwich ingredients to determine the intended user's preferences. **Focused tasks** - Pupils will practise following simple hygiene/health and safety procedures. They will practise using simple tools safely and learn various food processing techniques. **Design** - Pupils will design appealing products for a particular user based on simple design criteria. They will generate initial ideas and design criteria through investigating a variety of fruit and vegetables and communicate these ideas through talk and drawings. **Make** - Pupils will use simple utensils and equipment to peel, cut, slice, grate and chop safely. They will select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. **Evaluate** - Pupils will evaluate their ideas and finished products against design criteria, including intended user and purpose.	**Investigate** - Pupils will explore and evaluate a range of existing puppets. **Focused tasks** - Pupils will practise using templates and paper patterns. They will practise joining techniques - e.g. running stitch including threading own needle, stapling, lacing and gluing. They will practise finishing techniques e.g. sewing buttons, 3D fabric paint, gluing sequins, printing. **Design** - Pupils will design a functional and appealing product for a chosen user and purpose based on simple design criteria. Pupils will generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and ict. **Make** - Pupils will select from and use textiles according to their characteristics to make their puppet. They will use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. **Evaluate** - Pupils will evaluate their ideas throughout and their products against original criteria.
Key Vocabulary: vehicle, wheel, axle, axle holder, chassis, body, cab, assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, names of tools and equipment, design, make, evaluate, purpose, user, criteria, functional.	**Key Vocabulary:** ingredient names, names of equipment and utensils. Sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria.	**Key Vocabulary:** names of existing products, joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish, features, suitable, mock-up, design brief, design criteria, make, evaluate, user, purpose, function.

Curriculum Map
Design and Technology – Endpoints Y2

By the end of Y2

Mechanisms	Textiles
Designing Know how to generate initial ideas and simple design criteria through talking and using own experiences. Know how to develop and communicate ideas through drawings and mock-ups. **Making** Know how to select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. Know how to select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics. **Evaluating** Know how to explore and evaluate a range of products with wheels and axles. Know how to evaluate their ideas throughout and their products against original criteria. **Technical knowledge and understanding** Know how to explore and use wheels, axles and axle holders. Know how to distinguish between fixed and freely moving axles. Know and use technical vocabulary relevant to the project.	**Designing** Know how to design a functional and appealing product for a chosen user and purpose based on simple design criteria. Know how to generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology. **Making** Know how to select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. Know how to select from and use textiles according to their characteristics. **Evaluating** Know how to explore and evaluate a range of existing textile products relevant to the project being undertaken. Know how to evaluate their ideas throughout and their final products against original design criteria. **Technical knowledge and understanding** Understand how simple 3D 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. Know how to explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. Know and use technical vocabulary relevant to the project.

Curriculum Map
Food and Nutrition – Endpoints KS1

By the end of KS1

Food and Nutrition

Designing

Know how to design appealing products for a particular user based on simple design criteria.

Know how to generate initial ideas and design criteria through investigating a variety of fruit and vegetables.

Know how to communicate these ideas through talk and drawings.

Making

Know how to use simple utensils and equipment to e.g. peel, cut, slice,
squeeze, grate and chop safely.

Know how to select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.

Evaluating

Know how to taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.

Know how to 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.

Know how to use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The Eatwell Guide.

Know and use technical and sensory vocabulary relevant to the project.

Curriculum Map
Design and Technology – Overview Y3

Autumn Term Mechanisms (Levers and linkages)	Spring Term Textiles (2D-3D Shape)	Summer Term Food and Nutrition
Moving Volcanoes	**Bags and Purses**	**Quiches and Coleslaws**
Investigate - Pupils will investigate books and, where available, other products with lever and linkage mechanisms. **Focused tasks** - Pupils will learn how different levers and pivots work. They will practise accurately measuring, marking, cutting and joining card to create mechanisms. **Design** - Pupils will design a functional and appealing product for a chosen user and purpose based on simple design criteria. They will generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and ICT. **Make** - Pupils will select from and use appropriate tools with some accuracy to cut, shape and join paper and card to make their moving picture. They will use finishing techniques suitable for the product they are creating. **Evaluate** - Pupils will evaluate their own products and ideas against criteria and user needs, as they design and make.	**Investigate** - Pupils will investigate a range of bags/purses. They will learn how a key event/individual has influenced the development of the chosen product and/or fabric. **Focused tasks** - Pupils will practise two types of stitch (running and over-stitch); how to create a paper pattern; how to use finishing techniques and how to add different fastenings. **Design** - Pupils will generate realistic ideas through discussion and design criteria. They will produce annotated sketches, prototypes, final product sketches and pattern pieces. **Make** - Pupils will select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. They will select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern to make their product. **Evaluate** - Pupils will test their product against the original design criteria and with the intended user.	**Investigate** - Pupils will carry out sensory evaluations of a variety of ingredients and products and record these using tables/simple graphs. **Focused tasks** - Pupils will practise carrying out simple hygiene/health and safety procedures; using simple tools safely and learn various food processing techniques. Pupils will learn the eatwell plate. **Design** - Pupils will generate and clarify ideas through discussion with peers/adults to develop design criteria. They will use annotated sketches and appropriate ICT, such as web-based recipes, to develop and communicate ideas. **Make** - Pupils will select from a range of ingredients to make their products. They will select and use appropriate utensils and equipment to prepare and combine their ingredients. **Evaluate** - Pupils will evaluate the ongoing work and their final product with reference to the design criteria and the views of others.
Key Vocabulary: mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, purpose, function, prototype, design criteria, innovative, appealing, design brief	**Key Vocabulary:** fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance, user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces.	**Key Vocabulary:** name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet, planning, design criteria, purpose, user, annotated sketch, sensory evaluations.

Curriculum Map
Design and Technology – Endpoints Y3

By the end of Y3

Mechanisms	Textiles
Designing Know how to generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. Know how to use annotated sketches and prototypes to develop, model and communicate ideas. **Making** Know how to order the main stages of making. Know how to select from and use appropriate tools with some accuracy to cut, shape and join paper and card. Know how to select from and use finishing techniques suitable for the product they are creating. **Evaluating** Know how to investigate and analyse books and, where available, other products with lever and linkage mechanisms. Know how to evaluate their own products and ideas against criteria and user needs, as they design and make. **Technical knowledge and understanding** Understand and know how to use lever and linkage mechanisms. Know how to distinguish between fixed and loose pivots. Know and use technical vocabulary relevant to the project.	**Designing** Know how to generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. Know how to produce annotated sketches, prototypes, final product sketches and pattern pieces. **Making** Know how to plan the main stages of making. Know how to select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. Know how to select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities (e.g. pattern). **Evaluating** Know how to investigate a range of 3-D textile products relevant to the project. Know how to test their product against the original design criteria and with the intended user. Be able to take into account others' views. Understand how a key event/individual has influenced the development of the chosen product and/or fabric. **Technical knowledge and understanding** Know how to strengthen, stiffen and reinforce existing fabrics. Understand how to securely join two pieces of fabric together. Understand the need for patterns and seam allowances. Know and use technical vocabulary relevant to the project.

Curriculum Map
Design and Technology – Overview Y4

Autumn Term Food and Nutrition	Spring Term Structures	Summer Term Electrical Systems
Tomato Pasta	**Shell Structures**	**Torches**
Investigate - Pupils will carry out evaluations of a variety of ingredients and products and record these using tables/simple graphs. **Focused tasks** - Pupils will practise carrying out simple hygiene/health and safety procedures; using simple tools safely and learn various food processing techniques. Pupils will learn the eatwell plate. **Design** - Pupils will generate and clarify ideas through discussion with peers and adults to develop design criteria. Pupils will use annotated sketches and appropriate ICT, such as web-based recipes, to develop and communicate ideas. **Make** - Pupils will select from a range of ingredients to make their products. They will select and use appropriate utensils and equipment to prepare and combine their ingredients. **Evaluate** - Pupils will evaluate the ongoing work and their final product with reference to the design criteria and the views of others.	**Investigate** - Pupils will investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used. **Focused tasks** - Pupils will practise selecting and using appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. They will learn how 2D nets work to create 3D shapes and learn ways of strengthening shell structures. They will practise using CAD to create designs. **Design** - Pupils will generate realistic ideas and design criteria collaboratively through discussion. They will use annotated sketches and prototypes to model and communicate ideas and use CAD to create designs. **Make** - Pupils will order the main stages of making and use the appropriate tools/skills they learnt through focused tasks to make their structures. They will use suitable finishing techniques. **Evaluating** - Pupils will test and evaluate their own products against design criteria and the intended user and purpose.	**Investigate** - Pupils will investigate and analyse a range of existing battery-powered products. **Focused tasks** - Pupils will practise making manually controlled, simple series circuits with batteries. They will practise making a variety of switches that operate in different ways using simple classroom materials e.g. card, corrugated plastic, aluminium foil, paper fasteners and paper clips. **Design** - Pupils will develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. They will generate, develop, model and communicate realistic ideas through discussion and use annotated sketches, cross-sectional and exploded diagrams. **Make** - Pupils will consider the main stages in making and testing before assembling high quality products, drawing on the knowledge, understanding and skills learnt through focused tasks. **Evaluate** - Pupils will evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.
Key Vocabulary: name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet, planning, design criteria, purpose, user, annotated sketch, sensory evaluations.	**Key Vocabulary:** shell structure, three-dimensional (3D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype.	**Key Vocabulary:** shell structure, three-dimensional (3D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype.

Curriculum Map
Design and Technology – Endpoints Y4

By the end of Y4

Structures	Electrical Systems
Designing Know how to 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. Know how to develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas. **Making** Know how to plan the order of the main stages of making. Know how to select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy. Be able to explain their choice of materials according to functional properties and aesthetic qualities. Know how to use computer-generated finishing techniques suitable for the product they are creating. **Evaluating** Know how to investigate and evaluate a range of shell structures including the materials, components and techniques that have been used. Know how to 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.	**Designing** Know how to gather information about needs and wants, and develop design criteria. Know how to generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. **Making** Know how to order the main stages of making. Know how to select from and use tools and equipment to cut, shape, join and finish with some accuracy. Know how to select from and use materials and components, (inc construction materials/electrical components) according to their functional properties and aesthetic qualities. **Evaluating** Know how to investigate and analyse a range of existing battery-powered products. Be able to evaluate ideas and products against own design criteria and identify the strengths/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.

Curriculum Map
Food and Nutrition – Endpoints LKS2

By the end of Lower KS2

Food and Nutrition

Designing

Know how to generate and clarify ideas through discussion to develop design criteria (including appearance, taste, texture and aroma for an appealing product for a particular user and purpose).

Know how to use annotated sketches and appropriate ict, such as web-based recipes, to develop and communicate ideas.

Making

Know how to plan the main stages of a recipe, listing ingredients, utensils and equipment.

Be able to select and use appropriate utensils and equipment to prepare and combine ingredients.

Be able to select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.

Evaluating

Know how to carry out sensory evaluations of a variety of ingredients and products and be able to record the evaluations using a simple table.

Know how to 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/processed ingredients and whether they are grown, reared or caught.

Know and use relevant technical and sensory vocabulary appropriately.

Curriculum Map
Design and Technology – Overview Y5

Autumn Term Structures	Spring Term Mechanical Systems	Summer Term Food and Nutrition
Frame Structures	**Cams Toys**	**Vegetable Stew**
Investigate - Pupils will investigate and evaluate a range of portable and permanent frame structures e.g. tents, bus shelters, umbrellas. **Focused tasks** - Pupils will learn how to create strong structures using triangulation. They will learn how to create frameworks using different materials. They will learn how to use tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. **Design** - Pupils will learn to develop a simple design specification. They will generate, develop and model their ideas, through discussion, prototypes and annotated sketches. They will produce a detailed, step-by-step plan, listing tools and materials. **Make** - Pupils will make their products with accuracy drawing on their knowledge and skills from the focused tasks. They will use suitable finishing and decorative techniques. **Evaluate** - Pupils will regularly evaluate their work and their completed product, drawing on their design specification, and thinking about the intended purpose and user.	**Investigate** - Pupils will look at different types of toys in which cams mechanisms can be seen. They will learn about different movements including rotary, oscillating and reciprocating. **Focused tasks** - Pupils will learn how different cams create different movements. They will learn how to measure, mark, cut, shape and join effectively. They will learn to use tools and equipment accurately and safely. **Design** - Pupils will generate innovative ideas by carrying out research and develop a simple design specification to guide their thinking. Pupils will develop and communicate their ideas through discussion, annotated drawings, exploded drawings and drawings from different views. **Make** - Pupils will make a high quality product, applying knowledge, understanding and skills from the investigative and focused tasks. They will formulate step-by-step plans and, if appropriate, allocate tasks within a team. **Evaluate** - Pupils will evaluate throughout and compare the final product in use, to the original design specification. They will critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.	**Investigate** - Pupils will investigate a range of stew products and existing recipes linked to the principles of a healthy and varied diet. They will carry out sensory evaluations and record these using tables/graphs/charts. They will find out how a variety of ingredients used in products are grown and harvested, reared, caught and processed. **Focused tasks** - Pupils will learn how to use and follow a recipe. They will learn to select and use a range of utensils. They will use a range of techniques to prepare ingredients hygienically including grating, peeling, chopping and slicing (using bridge and claw technique). **Design** - Pupils will generate and clarify ideas through discussion to develop design criteria. Pupils will use annotated sketches and appropriate ICT, such as web-based recipes, to develop and communicate their ideas. **Make** - Pupils will prepare and cook a vegetable stew, using the knowledge and skills they learned in the focused tasks. **Evaluate** - Pupils will evaluate the ongoing work and the final product with reference to the design criteria and the views of others.
Key Vocabulary: frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional.	**Key Vocabulary:** 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, design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief.	**Key Vocabulary:** name of products, equipment, utensils, techniques and ingredients; nutrition, carbohydrate, protein, vitamins, nutrients, taste, heathy, savoury, appearance, smell, preference, greasy, moist, fresh, cook, fresh, savoury, available, source, seasonality, hygienic, edible, grown, reared, caught, frozen, tinned, seasonal, harvested healthy/varied diet.

Curriculum Map
Design and Technology – Endpoints Y5

By the end of Y5

Structures	Mechanical Systems
Designing Know how to carry out research into existing products, using surveys, interviews, questionnaires and web-based resources. Know how to develop a simple design specification, taking account of constraints including time, resources and cost. Know how to generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. **Making** Know how to formulate a clear plan, including a step-by-step list of what needs to be done/lists of resources to be used. Be able to competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. Know how to use finishing/decorative techniques suitable for the product they are designing and making. **Evaluating** Know how to investigate and evaluate a range of existing frame structures. Be able to critically evaluate own products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. Be able to research key events and individuals relevant to frame structures. **Technical knowledge and understanding** Understand how to strengthen, stiffen and reinforce 3D frameworks. Know and use technical vocabulary relevant to the project.	**Designing** Be able to generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. Know how to develop a simple design specification to guide their thinking. Know how to develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. **Making** Know how to produce detailed lists of tools, equipment and materials. Know how to formulate step-by-step plans and, if appropriate, allocate tasks within a team. Be able to select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Be able to work within the constraints of time, resources and cost. **Evaluating** Be able to compare the final product to the original design specification. • Know how to test products with the intended user, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Be able to consider the views of others to improve their work. Be able to 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.

Curriculum Map
Design and Technology – Overview Y6

Autumn Term Electrical Systems (Complex switches and circuits)	Summer Term Food and Nutrition
Electrical Buggies	**Calzones**
Investigate - Pupils will research and discuss a range of electrical toy vehicles and their target market. They will evaluate existing products and look at where the electrical components are in the toy by taking one apart. **Focused tasks -** Pupils will recap their measuring, marking out, cutting and joining skills with construction materials that they will need to create their electrical products. They will practise making secure electrical connections and explore a range of electrical systems that could be used to control their products. Pupils will learn how to avoid making short circuits and how the pulley works along with the electrical system to make the wheels move. **Design -** Pupils will generate innovative ideas by drawing on research. They will develop a design specification for their product, carefully considering the purpose and needs of the intended user. They will communicate their ideas through annotated sketches and pictorial representations of electrical circuits or circuit diagrams. They will produce detailed step-by-step plans and lists of tools, equipment and materials needed and if appropriate, allocate tasks within a team. **Make -** Pupils will competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional, attractive product. **Evaluate -** Pupils will continually evaluate and modify the working features of their product to match the initial design specification. They will test their product to demonstrate its effectiveness for the intended user and purpose.	**Investigate -** Pupils will investigate a range of pizza products and existing recipes linked to the principles of a healthy and varied diet. They will carry out sensory evaluations and record these using tables/graphs/charts. They will find out how a variety of ingredients used in products are grown and harvested, reared, caught and processed. **Focused tasks -** Pupils will learn how to use and follow a recipe. They will learn to select and use a range of utensils. They will use a range of techniques to prepare ingredients hygienically including grating, peeling, chopping and slicing (using bridge and claw technique). **Design -** Pupils will generate and clarify ideas through discussion to develop design criteria. Pupils will use annotated sketches and appropriate ICT, such as web-based recipes, to develop and communicate their ideas. **Make -** Pupils will prepare and cook a calzone pizza, using the knowledge and skills they learned in the focused tasks. **Evaluate -** Pupils will evaluate the ongoing work and the final product with reference to the design criteria and the views of others.
Key Vocabulary: series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart, function, innovative, design specification, design brief, user, purpose.	**Key Vocabulary:** ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble, design specification, innovative, research, evaluate, design brief.

Curriculum Map
Design and Technology – Endpoints Y6

By the end of Y6

Electrical Systems

Designing

Know how to use research to develop a design specification for a functional product that responds automatically to changes in the environment.

Be able to take account of constraints including time, resources and cost.

Know how to generate and develop innovative ideas and share and clarify these through discussion.

Know how to communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.

Making

Know how to formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.

Be able to competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.

Know how to create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.

Evaluating

Be able to continually evaluate and modify the working features of the product to match the initial design specification.

Know how to test the system to demonstrate its effectiveness for the intended user and purpose.

Be able to investigate famous inventors who developed groundbreaking electrical systems and components.

Technical knowledge and understanding

Understand and use electrical systems in their products.

Apply their understanding of computing to program, monitor and control their products.

Know and use technical vocabulary relevant to the project.

Curriculum Map
Food and Nutrition – Endpoints UKS2

By the end of Upper KS2

Food and Nutrition

Designing

Be able to generate innovative ideas through research and discussion with peers/adults to develop a design brief and criteria for a design specification.

Be able to explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.

Know how to use words, annotated sketches and ICT as appropriate to develop and communicate ideas.

Making

Know how to write a step-by-step recipe, including a list of ingredients, equipment and utensils.

Be able to select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.

Know how to make, decorate and present the food product appropriately for the intended user and purpose.

Evaluating

Know how to carry out sensory evaluations of a range of relevant products and ingredients.

Know how to record the evaluations using e.g. tables/graphs/charts such as star diagrams.

Be able to 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.

Know and use relevant technical and sensory vocabulary.