Fladbury

Church of England **Primary School** and **Preschool**

D&T Curriculum

Happy Hearts, Open Minds, Bright Futures

Jesus promised: “I came that you may have life and have it to the full.”

- John 10:10

Our Vision

Every child at Fladbury will know they are loved by God, have a **happy heart** and be part of a flourishing, well-led school. When they leave Fladbury, they will be well-prepared to meet challenges, confident in their abilities and look forward to their **bright future** with an **open mind**.

Our Design Technology Aims

At Fladbury, our Design Technology curriculum inspires our children to be creative and real problem solvers. It is important to us that our children acquire a broad range of subject knowledge and draw on the elements of STEM (Science, Technology, Engineering and Mathematics). At Fladbury the children are prepared to take risks and through evaluation of past and present design, our children develop a critical view and understanding of the impact of DT on their daily lives and the wider world.

Happy Hearts	Open Minds	Bright Futures
		
Through our Design and Technology Curriculum, the lens of our Christian value of 'joy' and our vision statement 'happy hearts', we will enjoy designing and making our own products for a purpose. Being creative allows us to express ourselves and enjoy the act of creating and producing something purposeful for identified individuals or groups. Our children will nurture an enjoyment of Design and Technology through carefully planned and enthusiastically delivered learning opportunities. For example, through making delicious, seasonal food products and tasting our efforts!	Through our Design and Technology Curriculum, we will learn to foster an 'Open Mind' about discovering the way in which different products are made and developed over time. Children are encouraged to think carefully about the way products have been created. The will be open to different techniques in Design and Technology. They will use wisdom to help them understand why and how products were created and apply this wisdom to their own designs. The natural curiosity of children at Fladbury is encouraged and nurtured to allow children to have an open mind and make their own creations.	Through learning about Design and Technology, children are given a sense of hope for their bright future as they can design their own products for a purpose and see how inventions have come into existence and how they help change our world. Children can see how they have the ability to create products that are useful and purposeful and help them to develop the skills needed to create a variety of products

Spirituality in Design Technology

Fladbury's definition of Spirituality is: Spirituality is about understanding that we are part of something bigger than ourselves. It's the connections and relationships we have with God, with others, with ourselves and with nature. It brings about a sense of awe and wonder and can lead to asking big questions about who we are and our place in God's world.

Within Design Technology the process of creative thinking and innovation inspires our children to bring out undiscovered talents, which in turn breeds a self confidence and belief in their abilities. It encourages them to be creative and exercise their imaginations, using their insight as they develop their ideas. DT encourages our children to appreciate and reflect upon the aesthetic nature of materials and design.

Intent	Implementation	Impact
At Fladbury First School, because of our vision, we believe that the children should have high-quality Design and Technology lessons that will engage and inspire them to think innovatively and develop their creativity. We aim to provide a broad and balanced curriculum and ensure the progressive development of knowledge and skills. Children will learn to design products for a purpose and be able to make and evaluate them with confidence. We want the children to experience the fullness of life by learning new skills and knowledge in DT that will stay with them as they continue their life and look forward to a bright future.	Design and Technology is mainly taught through a topic approach alongside History and Geography. Our Creative Curriculum is carefully planned to engage and excite all our learners. The activities in Design and Technology build upon the prior learning of the children. Children in their designing and making will apply knowledge and skills of: textiles, food, mechanisms and structures. Children will look at existing products before considering their own designs to support their knowledge and imagination.	Through the teaching of Design and Technology we enable all children to talk about how things work and to develop their technical knowledge. Apply a growing body of knowledge, understanding and skills in order to design and make prototypes and products for a wide range of users. Encourage children to select appropriate tools and techniques when making a product, whilst following safe procedures. Develop an understanding of technological processes and products, their manufacture and their contribution to our society. Foster enjoyment, satisfaction and purpose in designing and making things. Critique, evaluate and test their ideas and products, and the work of others. Understand and apply the principles of nutrition and to learn how to cook. Understand how key events and individuals in design and technology have helped shape the world.

National Curriculum

Early Years

Preschool

Reception

Early Learning Goals

Explore different materials, using all their senses to investigate them. Manipulate and play with different materials

Through preparing our snack independently on a daily basis, children learn the basic principles of healthy eating and a varied diet.
During snack time, children are taught about where food comes from.
Children follow a recipe to create their own healthy snacks e.g cucumber wraps.
They learn about food from around the world through our Geography based topics

Key Stage One

Design
Design purposeful, functional, appealing products for themselves and other users based on design criteria
Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make
Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate
Explore and evaluate a range of existing products
Evaluate their ideas and products against design criteria

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.

Cooking and Nutrition
Use the basic principles of a healthy and varied diet to prepare dishes
Understand where food comes from

Key Stage Two

Design
Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make
Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate
Investigate and analyse a range of existing products
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.

Cooking 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.

Our Curriculum

DESIGN & TECHNOLOGY ASSOCIATION

Projects on a Page

As members of the Design and Technology Association, we use the Projects on a Page scheme of work to enable us to implement the National Curriculum for D&T in an imaginative way. D&T gives children the opportunity to develop skills, knowledge and understanding of designing and making functional products. We feel it is vital to nurture creativity and innovation through design, and by exploring the designed and made world in which we all live and work.

Design and Technology helps us to teach Maths and English and other subjects on the curriculum in a fun and inspiring manner and put these subjects into context making them easier to digest and more understandable to younger primary age pupils.

Adaptive Teaching

Fladbury CE First School has a robust approach to adaptive teaching, ensuring that all children receive an education that responds to their strengths and needs. The use of scaffolding techniques allows teachers to break down complex concepts into manageable chunks, providing children with the support they need to work towards the same objectives as their peers. Visual resources such as word banks, diagrams and flash cards are often used in lessons to support all children to meet their learning objectives. Our school also embraces technology, utilising educational software such as Clickr and Widgit that engage children and provide opportunities for personalised learning. Additionally, active learning strategies, such as collaborative projects and hands-on activities, encourage children to engage with their lessons, fostering both peer interaction and critical thinking skills. Teachers ensure that children have access to practical concrete resources to further support their understanding and to give alternate ways of finding solutions to problems. Modelling is another critical strategy used by teachers, where they demonstrate thought processes and outline how they would complete a task to meet the learning objective. This allows children to observe and understand what they are working towards.

Through this multifaceted approach, Fladbury CE First School creates an inclusive learning environment where every child is supported in their educational journey, promoting not only academic success but also a lifelong love for learning.

Our Cycles of Learning

Cycle A	Autumn	Spring	Summer
Wye Preschool Reception	• 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. • 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. (**See Early Years Curriculum)**		
Avon Year 1/2	Mechanisms - Sliders and Levers (Christmas Cards)	Food - Preparing Fruit and Vegetables (Sandwiches)	Mechanisms - Wheels and Axles (Transport)
Teme Year 3/4		Mechanical Systems - Levers and Linkages (Egyptian Shadufs)	Electrical Systems - Simple Circuits and Switches (Lighthouse) Structures - Shell Structure (Landmark Structures)
Severn Year 5/6	Mechanical Systems - Pulley and Gear	Electrical Systems - More Complex switches and circuits	Textiles - Combining different fabric shapes

Cycle B	Autumn	Spring	Summer
Wye Preschool Reception	• 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. • 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. (**See Early Years Curriculum)**		
Avon Year 1/2	Structures - Freestanding Structures (Toy Boxes)	Textiles - Templates and Joining (Puppets)	Food - Healthy and Varied Diet (Salads)
Teme Year 3/4	Food - Healthy and Varied Diet (Harvest Soup)	Mechanical Systems - Pneumatics (Roman Chariots)	Textiles - 2D shape to 3D product (Anglo-Saxon Purses)
Severn Year 5/6	Mechanical Systems – Cams	Electrical Systems – Monitoring and Control	Textiles – Using computer aided design in textiles

Assessment

Assessing children in Design Technology is crucial for ensuring students develop key skills, knowledge and creativity in problem solving and practical application. It enables teachers to help track students' development in design thinking, practical skills and knowledge over time. Assessment also helps recognise and reward original ideas and encourages students to take design risks and experiment with materials and techniques.

Teachers continuously observe students' understanding and skills as they work on tasks. In Design Technology, this might involve:

Observation – monitoring students as they work on design projects, use tools and apply techniques
Questioning – asking open-ended questions to assess understanding and encourage critical thinking
Sketchbooks/Portfolios – reviewing students' design ideas, research and track progress
Peer and Self Assessment – encouraging students to evaluate their work and that of others to develop reflection skills
Mini reviews and feedback – providing verbal or written feedback at different stages of a project
Final product evaluation – assessing the finished design based on criteria such as functionality, aesthetics and user needs
Written assessments – using quizzes, written reflections or design briefs to assess theoretical knowledge
Presentation and justification – asking students to explain their design choices, materials and processes
Skills tests – evaluating practical abilities such as cutting, assembling and using technology, e.g.3D printing

Teachers will use the learning objectives for each lesson to measure whether children are working at the expected level of their year group.

Mechanisms

	Sliders and Levers	Wheels and Axles
Prior Learning	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.	Assembled vehicles with moving wheels using construction kits. Explored moving vehicles through play. Gained some experience of designing, making and evaluating products for a specified user and purpose. Developed some cutting, joining and finishing skills with card.
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.	Generate initial ideas and simple design criteria through talking and using own experience. Develop and communicate ideas through drawings and mock ups.
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.	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 ranged of materials and components such as paper, card, plastic and wood according to their characteristics.
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.	Explore and evaluate a range of products with wheels and axles. Evaluate their ideas throughout and their products against original 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.	Explore and use sliders and levers Understand that different mechanisms produce different types of movement. Know and use technical vocabulary relevant to the project.

Mechanical Systems

	Levers and Linkages	Pneumatics
Prior Learning	Explored and used mechanisms such as flaps, sliders and levers. Gained experience of basic cutting, joining and finishing techniques with paper and card.	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.
Designing	Generate realistic 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.	Generate realistic 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, shape and join paper and card. Select from and use finishing techniques suitable for the product they are creating.	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 and, where available, other products with lever and linkage mechanisms. Evaluate their own products and ideas against criteria and user needs, as they design and make.	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 lever and linkage mechanisms. Distinguish between fixed and loose pivots. Know and use technical vocabulary relevant to the project.	Understand and use pneumatic mechanisms. Know and use technical vocabulary relevant to the project.

Mechanical Systems

	Pulleys or Gears	Cams
Prior Learning	Experience of axles, axle holders and wheels that are fixed or free moving. Basic understanding of electrical circuits, simple switches and components. Experience of cutting and joining techniques with a range of materials including card, plastic and wood. An understanding of how to strengthen and stiffen structures.	Experience of axles, axle holders and wheels that are fixed or free moving. Basic understanding of different types of movement. 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.
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.	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.	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.	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. 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 gears and pulleys can be used to speed up, slow down or change the direction of movement. Know and use technical vocabulary relevant to the project.	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.

Structures

	Free Standing	Shell	Frame Structures
Prior Learning	Experience of using construction kits to build walls, towers and frameworks. Experience of using basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card Experience of different methods of joining card and paper	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.	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.
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.	Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product. Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas.	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	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.	Order the main stages of making. Select and use appropriate tools 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 finishing techniques suitable for the product they are creating.	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	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.	Investigate and evaluate a range of existing 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.	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	Know how to make freestanding structures stronger, stiffer and more stable. Know and use technical vocabulary relevant to the project.	Develop and use knowledge of how to construct strong, stiff shell structures. Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. Know and use technical vocabulary relevant to the project.	Understand how to strengthen, stiffen and reinforce 3-D frameworks. Know and use technical vocabulary relevant to the project.

Textiles

	Templates and Joining	2D Shape to 3D Product
Prior Learning	Explored and used different fabrics. Cut and joined fabrics with simple techniques. Thought about the user and purpose of products.	Have joined fabric in simple ways by gluing and stitching. Have used simple patterns and templates for marking out. Have evaluated a range of textile products
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.	Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. Produce annotated sketches, prototypes, final product sketches and pattern pieces.
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.	Plan the main stages of making. Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.
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.	Investigate a range of 3-D textile products relevant to the project. Test their product against the original design criteria and with the intended user. 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	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. Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. Know and use technical vocabulary relevant to the project.	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.

Textiles

	Combining different fabric shapes	Using computer aided design
Prior Learning	Experience of basic stitching, joining textiles and finishing techniques. Experience of making and using simple pattern pieces.	Experience of stitching, joining and finishing techniques in textiles. Experience of making and using textiles pattern pieces. Experience of simple computer-aided design applications.
Designing	Experience of basic stitching, joining textiles and finishing techniques. Experience of making and using simple pattern pieces.	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 to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.	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 and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work.	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.	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.

Food

	Preparing Fruit and Vegetables	Healthy and Varied Diet	Celebrating Culture and Seasonality
Prior Learning	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.	Know some ways to prepare ingredients safely and hygienically. Have some basic knowledge and understanding about healthy eating and The eat well plate. Have used some equipment and utensils and prepared and combined ingredients to make a product.	Have knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet. Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients.
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 and drawings.	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.	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	Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.	Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select and use appropriate utensils and equipment to prepare and combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.	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. Make, decorate and present the food product appropriately for the intended user and purpose.
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.	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.	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	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 eat well plate. Know and use technical and sensory vocabulary relevant to the project.	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	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.

Electrical Systems

	Simple Circuits and Switches	More complex switches and circuits	Monitoring and Control
Prior Learning	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.	Understanding of the essential characteristics of a series circuit and experience of creating a battery-powered, functional, electrical product. Initial experience of using computer control software and an interface box or a standalone box, e.g. writing and modifying a program to make a light flash on and off.	Initial experience of using computer control software and an interface box, a standalone box or microcontroller, e.g. Crumble. Some experience of writing and modifying a program to make a light turn on or flash on and off. Understanding of the essential characteristics of a series circuit and experience of creating a battery-powered, functional, electrical product.
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.	Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost. Generate and develop innovative ideas and share and clarify these through discussion. Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.	Develop a design specification for a functional product that responds automatically to changes in the environment. Generate, develop and communicate ideas through discussion, annotated sketches and pictorial representations of electrical circuits or circuit 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.	Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.	Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. Create and modify a computer control program to enable their electrical product to respond to changes in the environment.
Evaluating	Investigate and analyse a range of existing battery-powered products. Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.	Continually evaluate and modify the working features of the product to match the initial design specification. Test the system to demonstrate its effectiveness for the intended user and purpose. Investigate famous inventors who developed ground-breaking electrical systems and components.	Continually evaluate and modify the working features of the product to match the initial design specification. Test the system to demonstrate its effectiveness for the intended user and purpose.
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.	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.	Understand and use electrical systems in their products. Understand the use of computer control systems in products. Apply their understanding of computing to program, monitor and control their products. Know and use technical vocabulary relevant to the project.