Design and Technology

at Morton Church of England Primary School

At Morton Church of England Primary School, we value design and technology and want all our children by the end of year 6 to be enabled to develop the skills they need for designing and making through a range of creative and practical activities. To be able to develop their ability to investigate, analyse and evaluate a range of products, applying their understanding and technical knowledge across a range of products and materials. We will provide opportunities for children to work in a range of relevant contexts offering valuable life skills. Underpinning all this is a key focus on improving our children's communication skills, vocabulary, and the ambition so that all children will be designers regardless of background, needs or ability. Children need a hands-on approach that also gives access to other areas of the curriculum such as Mathematics, Science, Engineering, Computing and Art. Skills and techniques developed through Design and Technology are of great importance in our everchanging technological world to ensure that children are equipped for the next stages in their lives.

Design and Technology Implementation Statement

At Morton C of E Primary School we strive to provide an exciting and practical Design Technology curriculum which engages all learners. Design Technology is a subject which equips children with valuable life skills and challenges the problem solvers of the future.

Here at Morton C of E Primary School we support children to creatively solve practical problems both as individuals and through teamwork. Our aim is to encourage children investigate and explore a range of products, use their creativity and imagination to design and make items that solve real and relevant problems, whilst applying the technical knowledge they have acquired. Children will always be encouraged to consider their own and others' needs, wants and values through their designs.

We aim to, wherever possible, to make meaningful cross curricular links to other areas of the curriculum.

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, (or 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.

Design and Technology Impact Statement

Throughout their time at Morton C of E Primary School we strive to ensure that children will have acquired knowledge and understanding of different skills which they are able to apply to solve problems and creatively design and make products to meet a specific need.

Children will therefore be able to:

- Use a growing range of tools and materials as they progress through school.
- Demonstrate knowledge when using these tools or skills in other areas of the curriculum and in opportunities out of school.
- Develop skills to follow the design, make, evaluate process to meet a goal.
- Solve real life practical problems using innovation and creativity, both as an individual and as part of a group
- Use and understand an array of rich technical vocabulary associated with DT

National Curriculum Expectations

Early Years

During the EYFS pupils explore and use a variety of media and materials through a combination of child initiated and adult directed activities. They have the opportunities to learn to:

- Use different media and materials to express their own ideas
- Use what they have learnt about media and materials in original ways, thinking about form, function and purpose.
- Make plans and construct with a purpose in mind using a variety of resources.
- Develop skills to use simple tools and techniques appropriately, effectively and safely.
- Select appropriate resources for a product and adapt their work where necessary.
- Cook and prepare food adhering to good health and food hygiene routines

Key Stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed 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 playground 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 and 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 form 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.

National requirements for food and Nutrition at KS1

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition of healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning to cook is a crucial life skill that enables pupils to feed themselves and others affordably now and in later life.

Pupils should be taught to:

- Use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Key Stage 2

Within key stage 2 key events and individuals that have influenced the world of DT are teaching focuses that are to be covered.

The use of computer programmes and applications are also a key focus to be utilised by children in their design of their product.

National curriculum requirements at Key Stage 2

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 f0r for purpose, aimed at 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, such as cutting, shaping, joining and finishing, accurately.
- Select form and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional qualities 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 DT have helped shape the world.
- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
- Understand and use mechanical systems in their products, (for example as gears, pulleys, cams, levers and linkages)
- Understand and use electrical systems in their products (for example series circuits incorporating switches, bulbs, buzzers and motors)
- To apply their understanding of computing to programme, monitor and control their products.

National Curriculum requirements for food and nutrition at KS2

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well now and in later life.

Pupils should be taught to

- Understand and apply the principles of a healthy and varied diet
- Prepare and cook a variety of predominately savoury dishes using a range of cooking techniques
- To understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed

Our Design and Technology Curriculum

Curriculum Map

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	Cooking – pumpkin soup or muffins, apple crumble or bread Scissor safety Weaving a Christmas decoration **Explore** different materials and tools to develop ideas about what to make eg finger paint. Spoons, shells, brushes etc **Introduce** healthy lifestyles – washing hands, healthy snack time choices	Cooking – mince pies, stained glass window biscuits or poppy cakes **Name** the fruit at snack time and ingredients used during cooking **Build** towers using a variety of materials including tent building.	Cooking cheesy feet, gingerbread men **Discuss** experiment and evaluate how their construction models could be made more stable **Make** a musical instrument – joining techniques **Decide** how to use a range of materials to create something. Join materials **Make** simple models which express their work **Explore** how things work	Cooking Easter nests **Decide** how to use a range of materials to create something. Join materials **Make** simple models which express their work **Explore** how things work	Fruit kebabs **Develop** their own likes and dislikes in food and drink, willing to try new food textures and tastes **Assemble** and **join** a variety of constriction materials	Making ice cream **Develop** their own ideas and decide which materials to use to express them
Reception	Food **designing** and cooking a pizza for themselves, name ingredients, **evaluate** pizza	**Plan** a design Join and decorate Christmas stockings Cook Mince pies for Christmas event	**Decide** how to use a range of materials to create.	To **make** scones for an end of term party. **Evaluate**	**Design** and **make** clay bog babies, **evaluate**	To **design** and make their own minibeast, E**valuate**

	Introduce healthy lifestyles – washing hands, snack time and healthy choices Scissor safety		**Explore** materials freely and **develop** their own ideas			
Year 1	**Mechanisms, sliders and levers (POAP)** To design, make and evaluate a gingerbread man slider for a relative.		**Food: (POAP) preparing food and vegetables** To design, make and evaluate a fruit kebab for themselves at the 100 days of squirrel celebrations.		**Textiles, templates and joining techniques –(POAP) puppets** To design, make and evaluate a puppet from Jack and the Beanstalk for a show for Nursery children.	
Year 2	**Structures freestanding structures (POAP)** To design, make and evaluate a bridge for a lego person to cross.		**Wheels and axles (POAP)** To design, make and evaluate a vehicle that will transport and African animal.		**Food-preparing food and vegetables (POAP)** To design, make and evaluate a fruit salad for themselves to taste	
Year 3	**Structures, shell structures using CAD (POAP)** To design, make and evaluate a gift box to sell at the Christmas fate		**Food, healthy and varied diet (POAP)** To design and make Italian bread for themselves to taste		**Textiles, from a 2D to a 3D project (POAP)** To design, evaluate a brooch for a "day of the dad" class festival	
Year 4	**Mechanical systems, levers and linkages (POAP)** To design, make and evaluate a shaduf		**Electrical systems, simple circuits and switches (POAP**) To design make, and evaluate an alarm to protect a tomb in Egypt		**Food, healthy and varied diet (POAP)** To design and make and evaluate a Tudor potage for themselves to taste	
Year 5	**Mechanical systems – CAMS (POAP**) To make, design and evaluate a vehicle incorporating cam driven components for a race with a peer		**Textiles combining different fabric shapes (POAP**) To make, design and evaluate a mobile phone carrier or a tablet case for themselves		**Food, celebrating culture and seasonality (POAP**) To make, design and evaluate a Fassolatha for themselves	

Year 6	**Structures – frame structures (POAP)** To make, design and evaluate a WW2 shelter for themselves	**Food – Celebrating culture and seasonality (POAP)** To make, design and evaluate concha to share with Nursery	**More complex switches and circuits (POAP)** To make, design and evaluate an alarm for a valuable object for themselves

Progression in Knowledge

Age Phase	Year Group	Autumn	Spring	Summer
EYFS	**N**	**Check points (Birth to five and Development matters)**		
		Range 3 • Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. • Use their imagination as they consider what they can do with different materials. • Make simple models which express their ideas **Why this, Why now:**		
	R	**End points (Birth to five and Development matters)**		
		Range 5 Uses various construction materials, e.g. joining pieces, stacking vertically and horizontally, balancing, making enclosures and creating spaces • Uses tools for a purpose Range 6 • Uses their increasing knowledge and understanding of tools and materials to explore their interests and enquiries and develop their thinking **Why this, Why now:** **There are opportunities for D&T engagement across all seven areas of learning with EYFS and effective D&T practice should not be seen as either an exhaustive list or statutory requirements. Our EYFS curriculum is developed using non-statutory guidance from 'Development Matters' (2000) and the statutory framework for the early years foundation stage (2021) produced by the DfE.**		

KS1	**Key Concepts Y1**	Sliders and levers	Food	Templates and joining structures
	Y1	Children will know: • That books and everyday products have moving parts, including those with levers and sliders • To use words such as lever, pivot, slider, left, right, push, pull, up, down, forwards, backwards, in, out. • How to make a slider and lever • How to evaluate their completed card	Children will know: • How to answer questions about fruit and vegetables. • How to describe fruit and vegetables through talking and drawing. • How to evaluate the preference of their intended users and suitability for purpose.	Children will know: • How to investigate and evaluate existing products linked to their chosen project. • Be able to answer questions to check their understanding. • How to make drawings of existing products stating the user and the purpose. • How to label and identify their product.
	Why this and why now?			
		Children build on learning in EYFS such as: • 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.	Children build on learning in EYFS such as: • Naming and identifying different fruits and vegetables. • Cutting soft fruit and vegetables safely.	Children build on learning in EYFS such as: Early experiences of using different fabrics • Experience of cutting and joining fabrics with different techniques • Being able to communicate about the user and purpose of their product

	Local links	Giving a member of family a lever card	Fruit kebab for themselves at the 100 days of squirrel celebrations.	Invite younger peers to show their puppets
	Key Concepts Y2	Structures - freestanding structures	Wheels and axles	Food
	Y2	Children will know: • How to consider elements of structures such as what is their purpose, who might use them, materials used, joining technique, strength and stability. • How to draw, or take a picture of their structure and label it. • Use correct technical vocabulary in relation to their structure.	Children will know: • How to explore and evaluate their vehicle. Answer questions about their observations • How to draw and label their vehicle stating their user and purpose , labelling it with body, chassis, axles and axle holders. • How to share their knowledge about wheels and axles they have seen in real life	Children will know: • Basic food hygiene. • How to use simple utensils and skills such as peeling, slicing and squeezing. • About the importance of healthy eating
		Why this and why now?		
		Build on previous learning and experiences from: • Experience of using construction kits to build walls, towers and frameworks. • Experience of using basic tools • Experiences of using different methods of joining cards and pape	Build on previous learning and experiences from: • Assembling vehicles with moving wheels from construction kits • Exploring moving vehicles through play • Developed previous experience from using card	Build on previous learning and experiences from: • Experience of common fruit and vegetables undertaking sensory experiences • Experience of cutting soft fruit and vegetables using appropriate utensils.

	Local links	Consider local structures as point of reference	Share with peers from another class.	Whole class shared experience
Lower KS2	**Key Concepts Y3**	Structures, shell structures using CAD	Food, healthy and varied diet	Textiles, from a 2D to a 3D project
	Y3	Children will know: • How to answer questions relating to their understanding I.e. purpose, material chosen. • How to identify and discuss parts of a net. • Evaluate existing products to determine the effectiveness of designs. • To discuss graphics.	Children will know: • How to identify what ingredients are, be able to discuss food groups. • How to identify information about different types of bread. • Discuss where their ingredients have come from.	Children will know: • About different textile products that have a selection of stitches. • About some major changes in textile production. • About 3d shape, pattern and seam allowances. • How to answer key questions such as which joining technique makes the strongest seam to reflect upon their understanding.
	Why this and why now?			
		Build on previous learning and experiences from: • Joining, cutting and finishing techniques with paper and card. • A basic understanding of 2d and 3d shapes • Familiarity with word	Build on previous learning and experiences from: • Understanding how to prepare ingredients safely and hygienically. • Learning about healthy eating and the 'Eat well' plate. • Making a product using equipment and utensils.	Build on previous learning and experiences from: • Joining fabrics in simple ways by gluing and sticking. • Using simple patterns and templates for marking out. • Evaluating a range of textile products.

	Local links	**School fete**	**Share with peers**	**Class festival celebration, share with parents.**
	Key Concepts Y4	Mechanical systems levers and linkages		Food, healthy and varied diet
	Y4	Children will know: • How to explore and use mechanisms such as flaps. Sliders and levers. • How to cut and join paper and card • Different finishing techniques.	Children will know: • • Different finishing techniques	Children will know: • How to identify what ingredients are, be able to discuss food groups. • How to identify information about what has gone into their Tudor potage. • Discuss where their ingredients have come from. • Gather existing information about potage. - internet
		Why this and why now?		
		• **Build on previous learning and experiences from:** Exploring simple mechanisms. • Understanding how materials can be used to allow movement. • Joining and combining simple tools and techniques. • Having gained experience of basic cutting, joining	**Build on previous learning and experiences from**	**Build on previous learning and experiences from:** • Preparing ingredients safely and hygienically. • Learning about healthy eating and the Eatwell plate. • Making a product using equipment and utensils.

		and finishing techniques with		
	Local links	**Explain to relative - community**	**Science festival**	**Share with peers**
Upper KS2	**Key Concepts Y5**	Mechanical systems – CAMS	Textiles combining different fabric shapes	Food, celebrating culture and seasonality
	Y5	Children will know: • About different types of movement. • How to use observational drawings and questions to develop their understanding of their products in the handling collection and those they have researched. • How to undertake research relevant to their project.	Children will know: • How to investigate, analyse and evaluate a range of projects which have been produced by combining fabric structures. • Some designers and their work • How to investigate and analyse how existing projects have been constructed and properties of textiles through investigations.	Children will know: • How to use first hand and secondary resources to carry our relevant research • Into existing products to evaluate personal/Cultural preferences. • How to carry put sensory evaluations of existing food projects and ingredients relating to the project. • How to evaluate food ingredients and products.
	Why this and why now?			
		Build on previous learning and experiences from: • Experience of axles, axle holders, and wheels that are foxed or free moving. • How to cut and join techniques with a range of materials and to	**Build on previous learning and experiences from:** • Experiences of basic stitching, joining techniques and finishing techniques. • Knowledge of making and using simple pattern pieces.	**Build on previous learning and experiences from:** • Having knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet. • Being able to use appropriate equipment and utensils, and apply a range of techniques for measuring

		strengthen and soften structures.		out, preparing and combining ingredients
	Local links	**Class peers**	**Themselves**	**Themselves**
	Key Concepts Y6	Structures – frame structures	Food, celebrating culture and seasonality	More complex switches and circuits
	Y6	Children will know: • How to investigate and make annotated drawings of s range of portable and permanent frame structures. Develop their own ways to research their structure. • Information form researching key events and individuals relating to their shelter.	Children will know: • How to use first hand and secondary resources to carry our relevant research • How to carry put sensory evaluations of existing food projects and ingredients relating to the project. • How to research key chefs and how they have promoted seasonality, local produce and healthy eating.	Children will know: • How to research to find out which products respond to changes in the environment using a computer-controlled programme. • How to investigate electrical sensors to such as LDR's and a range of switches. • About the dangers of mains electricity. • Work of inventors such as Thomas Edison.
		Why this and why now?		
		Build on previous learning and experiences from: • Measuring, marking out joining, cutting, shaping and finishing techniques • Having a basic understanding of what structures are and how they can be made	Build on previous learning and experiences from: • Having knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet. • use appropriate equipment and utensils, and apply a range of techniques for	Build on previous learning and experiences from: • Understanding of the essential characteristics of series circuit and experience of creating a battery powered, functional, electrical product. • Using some computer control software.

		stronger, stiffer and more stable.	measuring out, preparing and combining ingredients	
	Local links	**Show and explain to peers on year 5**	**Nursery class**	**Family**

DT Skills Progression

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Designing Begin to use the language of designing and making, e.g. join, build and shape. - Learning about planning and adapting initial ideas to make them better.	**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. Design appealing products for a particular user based on a simple design criteria.	**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. Generate ideas based on simple design criteria and their own experiences,	**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.	**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	**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 including surveys, interviews and	**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

	Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. Communicate these ideas through talk and drawings. Design a functional and appealing product for a chosen user and purpose based on a simple design product. Generate, develop, model and communicate their ideas as appropriate.	explaining what they could make. Develop, model and communicate their ideas through talking, mock-ups and drawings. Design appealing products for a particular user based on a 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 product and user. Use annotated sketches and appropriate information and communication technology, such as web based recipes, to develop and communicate ideas. Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and	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 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 product and user. Use annotated sketches and appropriate information and communication	questionnaires. Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer aided design. Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. 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	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. Understanding of the essential characteristics of a series circuit and experience of creating a battery powered,

			specific user/s. Produce annotated sketches, prototypes, final product sketches and pattern pieces	technology, such as web based recipes, to develop and communicate ideas.	sketches and information and communication technology as appropriate to develop and communicate ideas.	functional, electrical product. Initial experience of using computer controlled software and an interface box or a standalone box eg writing and modifying a program to make a light flash on and off.
Making To learn to construct with a purpose in mind. -Selects tools and techniques needed to shape, assemble and join materials.	**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. Use simple utensils and equipment to e.g peel, cut,	**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	**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	**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.	**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 equipment and fabrics relevant to their tasks. Formulate step-by-step	**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

	slice, squeeze, grate and chop safely. Select from a range of fruit and vegetables according to their characteristics I.e colour, texture and taste to create a chosen product. 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.	suitable for the structure 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 range of materials and components such as paper, card, plastic and wood according to their characteristics	for the product they are creating. 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 Plan the main stages of making. Select and use a range of appropriate tools with some accuracy	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. 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	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. 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.	product they are designing and 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. Make, decorate and present the food product appropriately for the intended user and purpose. Formulate a step by step plan to guide making, listing tool equipment and components. Competently select and accurately assemble materials

		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 I.e colour, texture and taste to create a chosen product.	e.g. cutting, joining and finishing. Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.	food products, thinking about sensory characteristics.		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. .
Evaluating Begin to talk about changes made during the making process, e.g. making a decision to use a different joining method.	**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	**Evaluating** Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.	**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	**Evaluating** Understand and use pneumatic mechanisms. Know and use technical vocabulary relevant to the project	**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	**Evaluating** Continually evaluate and modify the working features of the product to march the initial design specification. Test the system to demonstrate its effectiveness for the intended user and purpose.

	purpose and the user and whether it meets design criteria. 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. Explore and evaluate a range of existing textile products relevant to the project being undertaken. Evaluate their ideas throughout and their final products against	Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. Explore and evaluate a range of products with wheels and axles. Evaluate their ideas throughout and their products against original criteria. Taste and evaluate a	criteria and the 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. 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	Investigate and analyse books, and other product with linkages Evaluate their own products and ideas against criteria and user needs, as they design and make. 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.	the views of others to improve their work. Investigate famous manufacturing and engineering companies relevant to the project. 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. 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.	Investigate famous inventors who developed groundbreaking electrical systems and components. 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. Carry out sensory evaluations of a range of relevant products and ingredients.

	the original design criteria	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.	how a key event/individual has influenced the development of the chosen product and/or fabric.		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.	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 how to use a range of tools, e.g. scissors, hole punch, stapler, woodworking tools, rolling	**Technical knowledge and understanding** Explore and use sliders and levers. Understand that different mechanisms produce different types of movement.	**Technical knowledge and understanding** Know how to make freestanding structures stronger, stiffer and more stable	**Technical knowledge and understanding** Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used.	**Technical knowledge and understanding** Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. Apply their	**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	**Technical knowledge and understanding** Understand how to strengthen, stiffen and reinforce 3-D frameworks. Know and use technical vocabulary relevant to the project

pins, pastry cutters. -Learn how everyday objects work by dismantling things. **Food** Begin to understand some of the tools, techniques and processes involved in food preparation. -Children have basic hygiene awareness	Know and use technical vocabulary relevant to the subject. Understand where a range of fruit and vegetables come from e.g. Farmed or grown at home. Understand and use basic procedures 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.	Explore and use wheels, axles and axle holders. Distinguish between fixed and freely moving axles. Know and use technical vocabulary relevant to the project. Understand where a range of fruit and vegetables come from e.g. Farmed or grown at home. Understand and use basic procedures of a healthy and varied diet to prepare dishes, including how	Test and evaluate their own products against design criteria and the intended user and purpose. 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. Know how to strengthen, stiffen and reinforce existing fabrics. Understand how to securely join two	understanding of computing to program and control their products. Know and use technical vocabulary relevant to the project. Understand and use lever mechanisms Distinguish between fixed and loose pivots Know and use technical 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	Know and use technical vocabulary relevant to the project. 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 when appropriate. 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	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. 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 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	fruit and vegetables are part of The Eatwell Plate. Know and use technical and sensory vocabulary relevant to the project.	pieces of fabric together. Know and use technical vocabulary relevant to the project.	whether they are grown, reared or caught. Know and use relevant technical and sensory vocabulary.		

Vocabulary

	Key Vocabulary		
EYFS	Vocabulary lined to materials - cut, stick, pull, push, tear, thread, screw, spin, design, make, create, adapt, secure, stable. Sew, connect, thread, join. Vocabulary linked to fruit names and ingredient names. chop, cut, slice, grate, knife, board, push. Vocabulary linked to directions. push, pull, spin, turn, open, close, force, move.		
KS1	KS1 **Sliders and levers** Slider, lever, pivot, slot, bridge, guide, card masking tape, paper faster, join, pull, push up, down, straight, curve, forwards, backwards, design, make, evaluate, user, purpose, ideas, design criteria, product, function. **Textiles** Names of existing products, joining and finishing techniques, tools, fabrics and components. Template, pattern pieces, mark out, join, decorate, finish. Features, suitable, qualify, mock up, design, brief, design criteria, make evaluate, user, purpose, function. **Freestanding structures** Cut, fold, join, fix	**Years 3/4** **Structures** Shell structure, 3D , shape, net, cube, cuboid, prism, vertex, edge, face, width, length, breath, capacity. Marking out, scoring, shaping, tabs, adhesive, join, assemble, accuracy, material, stiffest, reduce, reuse, recycle, font, lettering, text, graphics, decision, evaluate, design brief, protype, criteria **2D shape to 3D product** Names of fabrics, fasten, zip, button, structure, finishing technique, functional. Innovative, label, drawing, aesthetics, function, pattern pieces. **Shell structures** Shell structure, 3D, shape, net, cube, cuboid, prism, vertex, edge, face, width, length, breath, capacity.	**Years 5/6** **Cams** **C**am, snail cam, off centre, peg cam, models or toys with different mechanisms. Follower, axle, shaft, crank, handle, housing, framework, rotation, rotary motion, oscillating, reciprocating, annotated sketches, exploded diagrams, mechanical system, input movement, process, output movement, design decisions functionality, innovation, authentic, design brief and specification **Free standing 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,

	Structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge surface, thicker, thicker, corner, point, straight curved. Metal. Wool, plastic Design, make, evaluate, user, purpose, idea, design criteria, product, function. **Food** Fruit and vegetable names, names of equipment and utensils. Sensory vocabulary e.g. soft, juicy, crunchy, sweet, sour, hard. Flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, ingredients, tasting, arrangements, popular, design, evaluate, criteria. **Mechanisms** Vehicle, wheel, axle, axle holder, chassis, body, cab. Assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism. Names of tools, equipment and materials used. Design, make, evaluate, user, criteria, function.	Marking out, scoring, shaping, tabs, adhesive, join, assemble, accuracy, adhesive, corrugating, ribbing, graphics, design, evaluating, design brief and criteria, innovative, protype. **Levers and linkages** mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating user, purpose, function prototype, design criteria, innovative, appealing, design brief **Electrical systems – simple circuits and switches** 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 user, purpose, function, prototype, design criteria, innovative, appealing, design brief **Food** name of products, names of equipment, utensils, techniques and	make, evaluate, user, purpose, ideas, design criteria, product, **Electrical systems** Series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart, function, innovative, design brief and specification, user, purpose **Textiles** seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype **Frame Structures** frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional

		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	**Food** 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
KS2		**Textiles year 5/6** seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype	**More complex structures and circuits** 5/6 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.