Our Design & Technology Curriculum will nurture innovative and creative designers who understand the design process; apply mathematical and scientific concepts to designs; and have the skills needed to turn ideas into a reality, offering solutions to real-life problems.

DESIGN AND TECHNOLOGY: Concepts Overview

The **concepts** are the golden threads that run throughout the curriculum for each subject; they transcend context specific knowledge and skills. The concepts link directly to the N.C. subject aims.

Concept 1	Concept 2	Concept 3	Concept 4
Design and Make 	**Critique and Evaluate** 	**Technical knowledge** 	**Nutrition and Cooking** 
• **Build and apply a repertoire of knowledge, understanding and skills** in order to design and make high-quality prototypes and products for a wide range of users	• **Critique, evaluate and test** their ideas and products and the work of others	• **Develop the creative, technical and practical expertise** needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world	• **Understand and apply the principles of nutrition** and learn how to cook

D&T – Contents

DESIGN & TECHNOLOGY: Concept Milestones

The **Concept Milestones** break down the overarching concepts and indicate what pupils should achieve in each concept by the end of each Key Stage. The Milestones link directly to the N.C. subject content.

	Concept 1: Design and Make	Concept 2: Critique and Evaluate	Concept 3: Technical knowledge	Concept 4: Nutrition and Cooking
Milestone 1 (EYFS)	• They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function • Make use of props and materials • *They represent their own ideas, thoughts and feelings through design and technology*	• Share their creations, explaining the process they have used	• Safely use and explore a variety of materials, tools and techniques	• Understand the importance of healthy food choices
Milestone 2 (Yr 1/2)	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	• Explore a range of existing products *and how they have been created* • Evaluate a range of existing products *identifying likes and dislikes* • Evaluate their ideas and products against design criteria • *Suggest improvements to existing products or designs* • ***Refine their design as learning progresses***	• Build structures, exploring how they can be made stronger, stiffer and more stable • Explore and use mechanisms (for example: sliders, levers, wheels and axles) in their products	• Use the basic principles of a healthy and varied diet to prepare dishes • Understand where food comes from

	Concept 1: Design and Make	Concept 2: Critique and Evaluate	Concept 3: Technical knowledge	Concept 4: Nutrition and Cooking
Milestone 3 (Yr 3/4)	Design: • Use research and develop design criteria to inform the design of innovative, functional, appealing products • Generate, develop, model and communicate their ideas through discussion and annotated sketches Make: • **Select from and use a range of tools and equipment** to perform practical tasks (for example: cutting, shaping, joining and finishing), **with developing accuracy** • 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	• 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 • ***Refine work and techniques as learning progresses, continually evaluating the product design giving reasons for choices*** • **Identify some** key events and individuals in design and technology that have helped shape the world	• **Understand how to** strengthen, stiffen and reinforce structures • **Begin to** understand and use **simple** mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages) • **Begin to** understand and use **simple** electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) • **Begin to apply** their understanding of computing to **simply** program, monitor and control their products.	• Understand the principles of a healthy and varied diet • Prepare and cook **some simple** savoury dishes using a range of cooking techniques • **Begin to know** where and how a variety of ingredients are grown, reared, caught and processed

	Concept 1: Design and Make	Concept 2: Critique and Evaluate	Concept 3: Technical knowledge	Concept 4: Nutrition and Cooking
Milestone 4 (Yr 5/6)	Design: • Use research and develop design criteria to inform the design of innovative, functional, appealing products **that are *designed with a user in mind,* 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 ***giving reasons for choices*** • ***Ensure products have a high quality finish***	• 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 • ***Make products through stages of prototypes, making continual refinements*** • **Understand how** key events and individuals in design and technology have helped shape the world • ***Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices***	• **Apply understanding** of how to strengthen, stiffen and reinforce **more complex** structures • **Understand and effectively use** mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages) • **Understand and effectively use** electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) • **Effectively apply** their understanding of computing to program, monitor and control their products.	• Understand **and apply** the principles of a healthy and varied diet ***making links to nutrition and health*** • 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

DESIGN & TECHNOLOGY Learning

Nursery

EYFS Framework Links: Expressive Arts & Design, Physical Development

Concept	Milestone	Learning
Concept 1: Design and Make	1. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function 2. Make use of props and materials 3. *They represent their own ideas, thoughts and feelings through design and technology*	a) To make imaginative and complex small worlds with blocks and construction kits b) To use various construction materials e.g. joining pieces, stacking vertically and horizontally, balancing, making enclosures and creating spaces c) To explore different materials freely d) To develop ideas about how to use materials and what to make e) To develop own ideas f) To decide which materials to use g) *To begin to* join different materials and explore different textures
Concept 2: Critique and Evaluate	1. Share their creations, explaining the process they have used	*a) To talk about what they have made* b) *To begin to explain how they made their creation*
Concept 3: Technical Knowledge	1. Safely use and explore a variety of materials, tools and techniques	a) *To use some simple joining techniques* b) To use tools for a purpose *c) To use tools to make changes to materials* d) *To use simple tools safely*
Concept 4: Nutrition and Cooking	1. Understand the importance of healthy food choices	a) To make healthy choices about food, drink, activity and toothbrushing b) To be willing to try a range of different textures and tastes and express a preference

DESIGN & TECHNOLOGY Learning

Reception

EYFS Framework Links: Expressive Arts & Design, Physical Development

Concept	Milestone	Learning
Concept 1: Design and Make	1. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function 2. Make use of props and materials 3. They represent their own ideas, thoughts and feelings through design and technology	a) To use various construction materials e.g. joining pieces, stacking vertically and horizontally, balancing, making enclosures and creating spaces b) To use their increasing knowledge of tools and materials to explore their interests and enquiries and develop their thinking c) *To develop ideas about how to use materials and what to make* d) To develop own ideas through experimentation with diverse materials e) *To decide which materials to use* f) To join different materials and explore different textures
Concept 2: Critique and Evaluate	1. Share their creations, explaining the process they have used	*a) To talk about what they have made and its purpose* *b) To explain how they made their creation and the discoveries they have made* *c) To communicate their understanding of the materials and processes used and their effectiveness* d) *Begin to evaluate and improve their creations*
Concept 3: Technical Knowledge	1. Safely use and explore a variety of materials, tools and techniques	*a) To use some simple joining techniques* *b) To use tools to make changes to materials* *c) To use simple tools safely* d) *To practise some appropriate safety measures without direct supervision, considering both benefits and risk*
Concept 4: Nutrition and Cooking	1. Understand the importance of healthy food choices	a) To know and talk about healthy eating and toothbrushing b) To eat a healthy range of food and understand the need for variety in food c) To describe a range of different food textures and tastes when cooking d) To notice changes in food when ingredients are combined or when they are exposed to hot/cold temperatures (link to Science)

DESIGN & TECHNOLOGY Learning
Year 1 Autumn: 'Toys R Us!'

Aspect: Mechanisms **Focus:** Wheels and Axles

Concept	Milestone	Learning
Concept 1: Design and Make	**Design:** 1. Design purposeful, functional, appealing products for themselves and other users based on design criteria 2. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	Design a) Generate initial ideas and simple design criteria through talking and using their own experiences b) Develop and communicate ideas through drawings and mock-ups
	Make: **3.** Select from and use a range of tools and equipment to perform practical tasks (for example: cutting, shaping, joining and finishing) **4.** Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Make c) Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing d) Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics
Concept 2: Critique and Evaluate	1. Explore a range of existing products and how they have been created 2. Evaluate a range of existing products identifying likes and dislikes 3. Evaluate their ideas and products against design criteria 4. Suggest improvements to existing products or designs 5. Refine their design as learning progresses	a) Explore and evaluate a range of products with wheels and axles b) Evaluate their ideas throughout and their products against their original criteria
Concept 3: Technical knowledge	1. Explore and use mechanisms (for example: sliders, levers, wheels and axles) in their products	a) explore and use wheels, axles and axle holders b) Distinguish between fixed and freely moving axles c) Know and use technical vocabulary relevant to the project
Concept 4: Nutrition and Cooking	1. Use the basic principles of a healthy and varied diet to prepare dishes 2. Understand where food comes from	SPRING TERM

DESIGN & TECHNOLOGY Context Learning
Year 1 Spring: 'Island Destinations'

Aspect: Food **Focus:** Preparing Fruit and Vegetables

Concept	Milestone	Learning
Concept 1: Design and Make	**Design:** 1. Design purposeful, functional, appealing products for themselves and other users based on design criteria 2. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	Design a) Design appealing products for a particular user based on simple design criteria b) Generate initial ideas and design criteria through investigating a variety of fruit and vegetables c) Communicate these ideas through talk and drawings
	Make: **3.** Select from and use a range of tools and equipment to perform practical tasks (for example: cutting, shaping, joining and finishing) **4.** Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Make d) Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely e) Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product
Concept 2: Critique and Evaluate	1. Explore a range of existing products *and how they have been created* 2. Evaluate a range of existing products *identifying likes and dislikes* 3. Evaluate their ideas and products against design criteria 4. *Suggest improvements to existing products or designs* 5. Refine their design as learning progresses	Evaluate a) Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences b) Evaluate ideas and finished products against design criteria, including intended user and purpose
Concept 3: Technical knowledge	1. Build structures, exploring how they can be made stronger, stiffer and more stable 2. Explore and use mechanisms (for example: sliders, levers, wheels and axles) in their products	Technical Knowledge and Understanding a) Understand where a range of fruit and vegetables come from e.g. farmed or grown at home b) Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of the Eatwell Guide c) Know and use technical and sensory vocabulary relevant to the project
Concept 4: Nutrition and Cooking	1. Use the basic principles of a healthy and varied diet to prepare dishes 2. Understand where food comes from	**Juice** a) using a juicer to extract juice **Peel** b) with a swivel peeler with adult support **Spoon** c) ingredients into different containers with increasing accuracy and minimal spillage **Mix/stir** d) with increasing thoroughness to combine ingredients

Concept	Milestone	Learning
		Measure e) using different size measuring spoons, e.g. liquids **Cut** f) low resistance foods with a table knife (with adult assistance) into equal size pieces/slices e.g. canned pineapple slices, apples. **Follow** g) a simple recipe supported by an adult **Carry out** h) instructions with a little support

DESIGN & TECHNOLOGY Learning
Year 1 Summer: 'If You Go Down To The Woods Today'

Aspect: Textiles **Focus:** Templates and Joining Techniques

Concept	Milestone	Learning
Concept 1: Design and Make	**Design:** 1. Design purposeful, functional, appealing products for themselves and other users based on design criteria 2. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	Design a) Design a functional and appealing product for a chosen user and purpose based on simple design criteria b) Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology
	Make: **3.** Select from and use a range of tools and equipment to perform practical tasks (for example: cutting, shaping, joining and finishing) **4.** Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Make c) Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing d) Select from and use textiles according to their characteristics
Concept 2: Critique and Evaluate	1. Explore a range of existing products *and how they have been created* 2. Evaluate a range of existing products *identifying likes and dislikes* 3. Evaluate their ideas and products against design criteria 4. Suggest improvements to existing products or designs 5. Refine their design as learning progresses	a) Explore and evaluate a range of existing textile products relevant to the project being undertaken b) Evaluate their ideas throughout and their final products against original design criteria
Concept 3: Technical knowledge	1. Build structures, exploring how they can be made stronger, stiffer and more stable 2. Explore and use mechanisms (for example: sliders, levers, wheels and axles) in their products	a) Understand how simple 3D textile products are made, using a template to create two identical shapes b) Understand how to join fabrics using different techniques, e.g. running stitch, glue, over stitch, stapling c) Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons d) Know and use technical vocabulary relevant to the project
Concept 4: Nutrition and Cooking		SPRING TERM

DESIGN & TECHNOLOGY Learning
Year 2 Autumn: 'Fame, Fortune & Fire'

Aspect: Mechanisms **Focus:** Sliders and Levers

Concept	Milestone	Learning
Concept 1: Design and Make	**Design:** 1. Design purposeful, functional, appealing products for themselves and other users based on design criteria 2. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	Design a) Generate ideas based on simple design criteria and their own experiences, explaining what they could make b) Develop, model and communicate their ideas through drawings and mock-ups with card and paper
	Make: **3.** Select from and use a range of tools and equipment to perform practical tasks (for example: cutting, shaping, joining and finishing) **4.** Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Make c) Plan by suggesting what to do next d) Select and use tools, explaining their choices, to cut, shape and join paper and card e) Use simple finishing techniques suitable for the product they are creating
Concept 2: Critique and Evaluate	1. Explore a range of existing products *and how they have been created* 2. Evaluate a range of existing products *identifying likes and dislikes* 3. Evaluate their ideas and products against design criteria 4. *Suggest improvements to existing products or designs* 5. ***Refine their design as learning progresses***	a) Explore a range of existing books and everyday products that use simple sliders and levers b) Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria
Concept 3: Technical knowledge	1. Build structures, exploring how they can be made stronger, stiffer and more stable 2. Explore and use mechanisms (for example: sliders, levers, wheels and axles) in their products	a) Explore and use sliders and levers b) Understand that different mechanisms, produce different types of movement c) Know and use technical vocabulary relevant to the project
Concept 4: Nutrition and Cooking	1. Use the basic principles of a healthy and varied diet to prepare dishes 2. Understand where food comes from	SUMMER TERM

DESIGN & TECHNOLOGY Learning
Year 2 Spring: 'A World of Contrasts'

Aspect: Structures **Focus:** Freestanding Structures

Concept	Milestone	Learning
Concept 1: Design and Make	**Design:** 1. Design purposeful, functional, appealing products for themselves and other users based on design criteria 2. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	Design a) Generate ideas based on simple design criteria and their own experiences, explaining what they could make b) Develop, model and communicate their ideas through talking, mock-ups and drawings
	Make: **3.** Select from and use a range of tools and equipment to perform practical tasks (for example: cutting, shaping, joining and finishing) **4.** Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Make c) Plan by suggesting what to do next d) Select and use tools, skills and techniques, explaining their choices e) Select new and reclaimed materials and construction kits to build their structures f) Use simple finishing techniques suitable for the structure they are creating
Concept 2: Critique and Evaluate	1. Explore a range of existing products *and how they have been created* 2. Evaluate a range of existing products *identifying likes and dislikes* 3. Evaluate their ideas and products against design criteria 4. *Suggest improvements to existing products or designs* 5. ***Refine their design as learning progresses***	a) Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and building b) Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria
Concept 3: Technical knowledge	1. Build structures, exploring how they can be made stronger, stiffer and more stable 2. Explore and use mechanisms (for example: sliders, levers, wheels and axles) in their products	a) Know how to make freestanding structures stronger, stiffer and more stable b) Know and use technical vocabulary relevant to the project
Concept 4: Nutrition and Cooking	1. Use the basic principles of a healthy and varied diet to prepare dishes 2. Understand where food comes from	SUMMER TERM

DESIGN & TECHNOLOGY Learning
Year 2 Summer: 'All Aboard!'

Aspect: Food **Focus:** Preparing Fruit and Vegetables

Concept	Milestone	Learning
Concept 1: Design and Make Sandwich/ kite/ boat	**Design:** 1. Design purposeful, functional, appealing products for themselves and other users based on design criteria 2. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	Design a) Design appealing products for a particular user based on simple design criteria b) Generate initial ideas and design criteria through investigating a variety of fruit and vegetables c) Communicate these ideas through talk and drawings
	Make: **3.** Select from and use a range of tools and equipment to perform practical tasks (for example: cutting, shaping, joining and finishing) **4.** Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Make d) Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely e) Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product
Concept 2: Critique and Evaluate	1. Explore a range of existing products *and how they have been created* 2. Evaluate a range of existing products *identifying likes and dislikes* 3. Evaluate their ideas and products against design criteria 4. *Suggest improvements to existing products or designs* 5. ***Refine their design as learning progresses***	Evaluate a) y against design criteria, including intended user and purpose
Concept 3: Technical knowledge	1. Build structures, exploring how they can be made stronger, stiffer and more stable 2. Explore and use mechanisms (for example: sliders, levers, wheels and axles) in their products	Technical Knowledge and Understanding a) Understand where a range of fruit and vegetables come from e.g. farmed or grown at home b) Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of the Eatwell Guide c) Know and use technical and sensory vocabulary relevant to the project
Concept 4: Nutrition and Cooking	1. Use the basic principles of a healthy and varied diet to prepare dishes 2. Understand where food comes from	**Spread** a) Soft ingredients e.g. hummus **Shape** b) With accuracy for a desired effect, e.g. basic bread roll c) Use a rolling pin **Measure** d) Refer to ingredients in simple fractions e.g. half, quarter **Cut out**

Concept	Milestone	Learning
		e) Ingredients neatly with a cutter f) Use a table knife to cut dough into equal portions **Grate** g) Soft foods, e.g. cheese, cucumber **Snip** h) Fresh herbs, spring onions **Sift** i) Sift flour into a bowl **Thread** j) Thread soft foods onto cocktail sticks, e.g. fruit kebab

DESIGN & TECHNOLOGY Learning
Year 3 Autumn: 'Life Forces'

Aspect: Food **Focus:** Healthy and Varied Diet

Concept	Milestone	Learning
Concept 1: Design and Make	Design: 1. Use research and develop design criteria to inform the design of innovative, functional, appealing products 2. Generate, develop, model and communicate their ideas through discussion and annotated sketches	Design a) Generate and clarify ideas through discussion with peers and adults to develop design criteria b) Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas
	Make: 3. **Select from and use a range of tools and equipment** to perform practical tasks (for example: cutting, shaping, joining and finishing), **with developing accuracy** 4. 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	Make c) Plan the main stages of a recipe, listing ingredients, utensils and equipment d) Select and use appropriate utensils and equipment to prepare and combine ingredients e) Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics
Concept 2: Critique and Evaluate	1. Investigate and analyse a range of existing products 2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 3. ***Refine work and techniques as learning progresses, continually evaluating the product design giving reasons for choices*** 4. **Identify some** key events and individuals in design and technology that have helped shape the world	Evaluate a) Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs b) Evaluate the ongoing work and the final product with reference to the design criteria and the views of others
Concept 3: Technical knowledge	1. **Understand how to** strengthen, stiffen and reinforce structures 2. **Begin to** understand and use **simple** mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages) 3. **Begin to** understand and use **simple** electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) 4. **Begin to apply** their understanding of computing to **simply** program, monitor and control their products.	Technical Knowledge and Understanding a) Know how to use appropriate equipment and utensils to prepare and combine food b) Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught c) Know and use relevant technical and sensory vocabulary appropriately.

Concept	Milestone	Learning
Concept 4: Nutrition and Cooking	1. Understand the principles of a healthy and varied diet 2. Prepare and cook **some simple** savoury dishes using a range of cooking techniques 3. **Begin to know** where and how a variety of ingredients are grown, reared, caught and processed	**Press** a) Using a garlic press **Spread** b) Ingredients evenly over another food, e.g. tomato sauce over pizza base **Shape and mould** c) To create visually appealing products **Mix/stir** d) Any ingredients thoroughly **Spoon** e) To be able to use two spoons to transfer ingredients into different size/shape containers with minimal spillage e.g. wet ingredients into dry ingredients for pizza **Measure** f) Using a measuring jug with support to obtain accuracy g) Using digital scales with support to obtain accuracy **Cut** h) Medium resistance foods with a vegetable knife, e.g. mushrooms i) Use a fork or the claw grip to secure foods j) Medium resistant or partly prepared foods using a bridge hold, e.g cut half a tomato into a quarter **Follow** k) A simple recipe with guidance from an adult **Carry out** l) Instructions independently

DESIGN & TECHNOLOGY Learning
Year 3 Spring: 'Let There Be Light'

Aspect: Structures **Focus:** Shell Structures using C.A.D.
Aspect: Electrical Systems **Focus:** Simple Circuits and Switches, Simple Programming and Control

Concept	Milestone	Learning
Concept 1: Design and Make	Design: 1. Use research and develop design criteria to inform the design of innovative, functional, appealing products 2. Generate, develop, model and communicate their ideas through discussion and annotated sketches Make: 3. **Select from and use a range of tools and equipment** to perform practical tasks (for example: cutting, shaping, joining and finishing), **with developing accuracy** 4. 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	***Structures*** Design a) 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 b) Develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas c) Make d) Plan the order of the main stages of making e) Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy f) Explain their choice of materials according to functional properties and aesthetic qualities g) Use computer-generated finishing techniques suitable for the product they are creating h) ***Electrical Systems*** Design i) Gather information about the user's needs and wants, and develop design criteria to inform the design of products that are fit for purpose j) Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams k) Make l) Order of the main stages of making m) Select from and use tools and equipment to cut, shape, join and finish with some accuracy n) Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities o) Connect simple electrical component and a battery in a series circuit to achieve a functional outcome p) Program a standalone control box, microcontroller or interface box to enhance the way the product works
Concept 2: Critique and Evaluate	1. Investigate and analyse a range of existing products 2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	***Structures*** a) Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used b) Test and evaluate their own products against design criteria and the intended user and purpose ***c) Electrical Systems***

Concept	Milestone	Learning
	3. ***Refine work and techniques as learning progresses, continually evaluating the product design giving reasons for choices*** 4. **Identify some** key events and individuals in design and technology that have helped shape the world	d) Investigate and analyse a range of existing battery-powered products, including pre-programmed and programmable products e) Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work
Concept 3: Technical knowledge	1. **Understand how to** strengthen, stiffen and reinforce structures 2. **Begin to** understand and use **simple** mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages) 3. **Begin to** understand and use **simple** electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) 4. **Begin to apply** their understanding of computing to **simply** program, monitor and control their products.	a) Know and use technical vocabulary relevant to the project *b)* ***Structures*** c) Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes d) Develop and use knowledge of how to construct strong, stiff shell structures ***e) Electrical Systems*** f) Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers g) Apply their understanding of computing to program and control their products
Concept 4: Nutrition and Cooking	1. Understand the principles of a healthy and varied diet 2. Prepare and cook **some simple** savoury dishes using a range of cooking techniques 3. **Begin to know** where and how a variety of ingredients are grown, reared, caught and processed	

DESIGN & TECHNOLOGY Learning

Year 4 Autumn: 'Water, Water Everywhere'

Aspect: Mechanical Systems **Focus:** Levers and Linkages

Concept	Milestone	Learning
Concept 1: Design and Make	Design: 1. Use research and develop design criteria to inform the design of innovative, functional, appealing products 2. Generate, develop, model and communicate their ideas through discussion and annotated sketches	Design a) Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user b) Use annotated sketches and prototypes to develop, model and communicate ideas
	Make: 3. **Select from and use a range of tools and equipment** to perform practical tasks (for example: cutting, shaping, joining and finishing), **with developing accuracy** 4. 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	Make c) Order the main stages of making d) Select from and use appropriate tools with some accuracy to cut, shape and join paper and card e) Select from and use finishing techniques suitable for the product they are creating
Concept 2: Critique and Evaluate	1. Investigate and analyse a range of existing products 2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 3. ***Refine work and techniques as learning progresses, continually evaluating the product design giving reasons for choices*** 4. **Identify some** key events and individuals in design and technology that have helped shape the world	a) Investigate and analyse books and, where available, other products with lever and linkage mechanisms b) Evaluate their own products and ideas against criteria and user needs, as they design and make
Concept 3: Technical knowledge	1. **Understand how to** strengthen, stiffen and reinforce structures 2. **Begin to** understand and use **simple** mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages) 3. **Begin to** understand and use **simple** electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) 4. **Begin to apply** their understanding of computing to **simply** program, monitor and control their products.	a) Understand and use lever and linkage mechanisms b) Distinguish between fixed and loose pivots c) Know and use technical vocabulary relevant to the project

DESIGN & TECHNOLOGY Learning
Year 4 Spring: 'Sunshine Islands'

Aspect: Food **Focus:** Healthy and Varied Diet

Concept	Milestone	Learning
Concept 1: Design and Make	Design: 1. Use research and develop design criteria to inform the design of innovative, functional, appealing products 2. Generate, develop, model and communicate their ideas through discussion and annotated sketches	Design a) Generate and clarify ideas through discussion with peers and adults to develop design criteria b) Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas
	Make: 3. **Select from and use a range of tools and equipment** to perform practical tasks (for example: cutting, shaping, joining and finishing), **with developing accuracy** 4. 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	Make c) Plan the main stages of a recipe, listing ingredients, utensils and equipment d) Select and use appropriate utensils and equipment to prepare and combine ingredients e) Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics
Concept 2: Critique and Evaluate	1. Investigate and analyse a range of existing products 2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 3. ***Refine work and techniques as learning progresses, continually evaluating the product design giving reasons for choices*** 4. **Identify some** key events and individuals in design and technology that have helped shape the world	Evaluate a) Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs b) Evaluate the ongoing work and the final product with reference to the design criteria and the views of others
Concept 3: Technical knowledge	1. **Understand how to** strengthen, stiffen and reinforce structures 2. **Begin to** understand and use **simple** mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages) 3. **Begin to** understand and use **simple** electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) 4. **Begin to apply** their understanding of computing to **simply** program, monitor and control their products.	Technical Knowledge and Understanding a) Know how to use appropriate equipment and utensils to prepare and combine food b) Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught c) Know and use relevant technical and sensory vocabulary appropriately.

Concept	Milestone	Learning
Concept 4: Nutrition and Cooking	1. Understand the principles of a healthy and varied diet 2. Prepare and cook **some simple** savoury dishes using a range of cooking techniques 3. **Begin to know** where and how a variety of ingredients are grown, reared, caught and processed	**Peel** a) With a swivel peeler with supervision **Mix/stir** b) Whisk foods using a hand-whisk **Spoon** c) To be able to use two spoons to transfer ingredients into different size/shape containers with minimal spillage e.g. liquid foods into baking cases **Cut out** d) Placing the cutter in positions to make good use of the material and avoid waste **Grate** e) Firmer foods, e.g. carrots, apples **Snip** f) With greater dexterity and control, e.g. to shred lettuce or cabbage leaves for salad **Thread** g) Medium resistance foods onto kebab sticks, e.g. mushrooms, courgettes **Cut** h) Use a fork or the claw grip to secure foods

DESIGN & TECHNOLOGY Learning
Year 4 Summer: 'On The Home Front'

Aspect: Textiles **Focus:** 2D Shape to 3D product

Concept	Milestone	Learning
Concept 1: Design and Make	Design: 1. Use research and develop design criteria to inform the design of innovative, functional, appealing products 2. Generate, develop, model and communicate their ideas through discussion and annotated sketches	Design a) Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s b) Produce annotated sketches, prototypes, final product sketches and pattern pieces
	Make: 3. **Select from and use a range of tools and equipment** to perform practical tasks (for example: cutting, shaping, joining and finishing), **with developing accuracy** 4. 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	Make c) Plan the main stages of making d) Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing e) Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern
Concept 2: Critique and Evaluate	1. Investigate and analyse a range of existing products 2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 3. ***Refine work and techniques as learning progresses, continually evaluating the product design giving reasons for choices*** 4. **Identify some** key events and individuals in design and technology that have helped shape the world	a) Investigate a range of 3D textile products relevant to the project b) Test their product against the original design criteria and with the intended user c) Take into account others' views d) Understand how a key event/individual has influenced the development of the chosen product and/or fabric
Concept 3: Technical knowledge	1. **Understand how to** strengthen, stiffen and reinforce structures 2. **Begin to** understand and use **simple** mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages) 3. **Begin to** understand and use **simple** electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) 4. **Begin to apply** their understanding of computing to **simply** program, monitor and control their products.	a) Know how to strength, stiffen and reinforce existing fabrics b) Understand how to securely join two pieces of fabric together c) Understand the need for patterns and seam allowances d) Know and use technical vocabulary relevant to the project
Concept 4: Nutrition and Cooking	1. Understand the principles of a healthy and varied diet 2. Prepare and cook **some simple** savoury dishes using a range of cooking techniques 3. **Begin to know** where and how a variety of ingredients are grown, reared, caught and processed	

DESIGN & TECHNOLOGY Learning
Year 5 Autumn: 'Humans Vs Nature'

Aspect: Structures **Focus:** Frame Structures

Concept	Milestone	Learning
Concept 1: Design and Make	**Design:** 1. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are designed with a user in mind, fit for purpose, aimed at particular individuals or groups 2. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Design: a) Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources b) Develop a simple design specification to guide the development of their ideas and products, taking account of constraints, including time, resources and cost c) Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches
	Make: 3. Select from and use a wider range of tools and equipment to perform practical tasks (for example: cutting, shaping, joining and finishing), accurately **4.** 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 giving reasons for choices **5.** Ensure products have a high quality finish	Make: d) Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used e) Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks f) Use finishing and decorative techniques suitable for the product they are designing and making
Concept 2: Critique and Evaluate	1. Investigate and analyse a range of existing products 2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 3. ***Make products through stages of prototypes, making continual refinements*** 4. **Understand how** key events and individuals in design and technology have helped shape the world 5. ***Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices***	a) Investigate and evaluate a range of existing frame structures b) Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests c) Research key events and individuals relevant to frame structures
Concept 3: Technical knowledge	**1. Apply understanding of how to strengthen, stiffen and reinforce more complex structures** 2. **Understand and effectively use mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages)** 3. **Understand and effectively use** electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) 4. **Effectively apply** their understanding of computing to program, monitor and control their products.	a) Understand how to strengthen, stiffen and reinforce 3D frameworks b) Know and use technical vocabulary relevant to the project

Concept	Milestone	Learning
Concept 4: Nutrition and Cooking	1. Understand **and apply** the principles of a healthy and varied diet ***making links to nutrition and health*** 2. Prepare and cook **a variety** of predominantly savoury dishes using a range of cooking techniques 3. **Understand seasonality, and know** where and how a variety of ingredients are grown, reared, caught and processed	

DESIGN & TECHNOLOGY Learning
Year 5 Spring: 'Fit For Life'

Aspect: Food **Focus:** Celebrating Culture and Seasonality

Concept	Milestone	Learning
Concept 1: Design and Make	**Design:** 1. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are designed with a user in mind, fit for purpose, aimed at particular individuals or groups 2. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Design a) Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification b) Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose c) Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas
	Make: 3. Select from and use a wider range of tools and equipment to perform practical tasks (for example: cutting, shaping, joining and finishing), accurately **4.** 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 giving reasons for choices **5.** Ensure products have a high quality finish	Make d) Write a step-by-step recipe, including a list of ingredients, equipment and utensils e) Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients f) Make, decorate and present the food product appropriately for the intended user and purpose
Concept 2: Critique and Evaluate	1. Investigate and analyse a range of existing products 2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 3. ***Make products through stages of prototypes, making continual refinements*** 4. **Understand how** key events and individuals in design and technology have helped shape the world 5. ***Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices***	Evaluate a) 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 b) Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements c) Understand how key chefs have influenced eating habits to promote varied and healthy diets
Concept 3: Technical knowledge	**1. Apply understanding of how to strengthen, stiffen and reinforce more complex structures** 2. **Understand and effectively use mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages)** 3. **Understand and effectively use** electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) 4. **Effectively apply** their understanding of computing to program, monitor and control their products.	Technical Knowledge and Understanding a) Know how to use utensils and equipment including heat sources to prepare and cook food b) Understand about seasonality in relation to food products and the source of different food products c) Know and use relevant technical and sensory vocabulary

Concept	Milestone	Learning
Concept 4: Nutrition and Cooking	1. Understand **and apply** the principles of a healthy and varied diet ***making links to nutrition and health*** 2. Prepare and cook **a variety** of predominantly savoury dishes using a range of cooking techniques 3. **Understand seasonality, and know** where and how a variety of ingredients are grown, reared, caught and processed	**Mix/stir** a) Fold ingredients together carefully **Spoon** b) Be able to gauge the quantities spooned to ensure an equal amount of ingredients in each container **Measure** c) Using a measuring jug independently and accurately d) Using digital and analogue scales accurately and independently **Grate** e) Using the zesting part of a grater, e.g. lemon, orange f) Use a nutmeg grater **Follow** g) A simple recipe independently **Carry out** h) Modifications to recipes

DESIGN & TECHNOLOGY Learning

Year 5 Summer: 'Innovation & Inspiration'

Aspect: Mechanical Systems **Focus:** Cams & (Pulleys or Gears)

Concept	Milestone	Learning
Concept 1: Design and Make	**Design:** 1. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are designed with a user in mind, fit for purpose, aimed at particular individuals or groups 2. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Design: a) Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources b) Develop a simple design specification to guide their thinking c) Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views
	Make: 3. Select from and use a wider range of tools and equipment to perform practical tasks (for example: cutting, shaping, joining and finishing), accurately **4.** 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 giving reasons for choices **5.** Ensure products have a high quality finish	Make d) Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team e) 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
Concept 2: Critique and Evaluate	1. Investigate and analyse a range of existing products 2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 3. ***Make products through stages of prototypes, making continual refinements*** 4. **Understand how** key events and individuals in design and technology have helped shape the world 5. ***Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices***	a) Compare the final product to the original design specification b) Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose c) Consider the views of others to improve their work d) Investigate famous manufacturing and engineering companies relevant to the project
Concept 3: Technical knowledge	**1. Apply understanding of how to strengthen, stiffen and reinforce more complex structures** 2. **Understand and effectively use mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages)** 3. **Understand and effectively use** electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) 4. **Effectively apply** their understanding of computing to program, monitor and control their products.	a) Understand that mechanical and electrical systems have an input, process and an output b) Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement c) Understand how cams can be used to produce different types of movement and change the direction of movement d) Know and use technical vocabulary relevant to the project

Concept	Milestone	Learning
Concept 4: Nutrition and Cooking	1. Understand **and apply** the principles of a healthy and varied diet ***making links to nutrition and health*** 2. Prepare and cook **a variety** of predominantly savoury dishes using a range of cooking techniques 3. **Understand seasonality, and know** where and how a variety of ingredients are grown, reared, caught and processed	

DESIGN & TECHNOLOGY Learning
Year 6 Autumn: 'Think Green'

Aspect: Textiles **Focus:** Using C.A.D. in Textiles

Concept	Milestone	Learning
Concept 1: Design and Make	**Design:** 1. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are designed with a user in mind, fit for purpose, aimed at particular individuals or groups 2. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Design: a) Generate innovative ideas through research including surveys, interviews and questionnaires b) Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes including using computer-aided design c) Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification
	Make: 3. Select from and use a wider range of tools and equipment to perform practical tasks (for example: cutting, shaping, joining and finishing), accurately **4.** 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 giving reasons for choices **5.** Ensure products have a high quality finish	Make d) Produce detailed lists of equipment and fabrics relevant to their tasks e) Formulate step-by-step plans and, if appropriate, allocate tasks within a team f) Select from and use a range of tools and equipment, including C.A.D, to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost
Concept 2: Critique and Evaluate	1. Investigate and analyse a range of existing products 2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 3. ***Make products through stages of prototypes, making continual refinements*** 4. **Understand how** key events and individuals in design and technology have helped shape the world 5. ***Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices***	a) Investigate and analyse textile products linked to their final product b) Compare the final product to the original design specification c) Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose d) Consider the views of others to improve their work
Concept 3: Technical knowledge	1. **Apply understanding** of how to strengthen, stiffen and reinforce **more complex** structures 2. **Understand and effectively use** mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages) 3. **Understand and effectively use** electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) 4. **Effectively apply** their understanding of computing to program, monitor and control their products.	a) A 3D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics b) Fabrics can be strengthened, stiffened and reinforced where appropriate

Concept	Milestone	Learning
Concept 4: Nutrition and Cooking	1. Understand **and apply** the principles of a healthy and varied diet ***making links to nutrition and health*** 2. Prepare and cook **a variety** of predominantly savoury dishes using a range of cooking techniques 3. **Understand seasonality, and know** where and how a variety of ingredients are grown, reared, caught and processed	

DESIGN & TECHNOLOGY Learning
Year 6 Spring: 'Save The Planet'

Aspect: Food **Focus:** Celebrating Culture and Seasonality

Concept	Milestone	Learning
Concept 1: Design and Make	**Design:** 1. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are designed with a user in mind, fit for purpose, aimed at particular individuals or groups 2. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Design a) Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification b) Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose c) Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas
	Make: 3. Select from and use a wider range of tools and equipment to perform practical tasks (for example: cutting, shaping, joining and finishing), accurately **4.** 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 giving reasons for choices **5.** Ensure products have a high quality finish	Make d) Write a step-by-step recipe, including a list of ingredients, equipment and utensils e) Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients f) Make, decorate and present the food product appropriately for the intended user and purpose
Concept 2: Critique and Evaluate	1. Investigate and analyse a range of existing products 2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 3. ***Make products through stages of prototypes, making continual refinements*** 4. **Understand how** key events and individuals in design and technology have helped shape the world 5. ***Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices***	Evaluate a) 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 b) Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements c) Understand how key chefs have influenced eating habits to promote varied and healthy diets
Concept 3: Technical knowledge	1. **Apply understanding** of how to strengthen, stiffen and reinforce **more complex** structures 2. **Understand and effectively use** mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages) 3. **Understand and effectively use** electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) 4. **Effectively apply** their understanding of computing to program, monitor and control their products.	Technical Knowledge and Understanding a) Know how to use utensils and equipment including heat sources to prepare and cook food b) Understand about seasonality in relation to food products and the source of different food products c) Know and use relevant technical and sensory vocabulary

Concept	Milestone	Learning
Concept 4: Nutrition and Cooking	1. Understand **and apply** the principles of a healthy and varied diet ***making links to nutrition and health*** 2. Prepare and cook **a variety** of predominantly savoury dishes using a range of cooking techniques 3. **Understand seasonality, and know** where and how a variety of ingredients are grown, reared, caught and processed	**Peel** a) With a swivel peel to create food ribbons to be used in a dish, e.g. courgette/carrot ribbons, with supervision **Spoon** b) Be able to gauge the quantities spooned to ensure an equal amount of ingredients in each container **Grate** c) Use a nutmeg grater **Thread** d) Higher resistance foods onto kebab sticks, e.g. peppers, onions **Cut** e) Higher resistance foods with a vegetable knife, using the claw grip e.g. celery, carrots f) Higher resistance foods from whole using the bridge hold, e.g. halve and apple or raw potato

DESIGN & TECHNOLOGY Learning
Year 6 Summer: 'Eureka!'

Aspect: Electrical Systems **Focus:** Monitoring and Control, More Complex Switches and Circuits

Concept	Milestone	Learning
Concept 1: Design and Make	**Design:** 1. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are designed with a user in mind, fit for purpose, aimed at particular individuals or groups 2. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Design a) 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 b) Generate and develop innovative ideas and share and clarify these through discussions c) Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams
	Make: 3. Select from and use a wider range of tools and equipment to perform practical tasks (for example: cutting, shaping, joining and finishing), accurately **4.** 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 giving reasons for choices **5.** Ensure products have a high quality finish	Make d) Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components e) Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product f) Create and modify a computer control program to enable their electrical product to work automatically in response to changes in the environment
Concept 2: Critique and Evaluate	1. Investigate and analyse a range of existing products 2. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 3. ***Make products through stages of prototypes, making continual refinements*** 4. **Understand how** key events and individuals in design and technology have helped shape the world 5. ***Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices***	a) Continually evaluate and modify the working features of the product to match the initial design specification b) Test the system to demonstrate its effectiveness for the intended user and purpose c) Investigate famous inventors who developed ground-breaking electrical systems and components
Concept 3: Technical knowledge	1. **Apply understanding** of how to strengthen, stiffen and reinforce **more complex** structures 2. **Understand and effectively use** mechanical systems in their products (for example, gears, pulleys, cams, levers, and linkages) **3. Understand and effectively use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors)** 4. **Effectively apply their understanding of computing to program, monitor and control their products**.	a) Understand and use electrical systems in their products b) Understand the use of computer control systems in products c) Apply their understanding of computing to program, monitor and control their products d) Know and use technical vocabulary relevant to the project

Concept	Milestone	Learning
Concept 4: Nutrition and Cooking	1. Understand **and apply** the principles of a healthy and varied diet ***making links to nutrition and health*** 2. Prepare and cook **a variety** of predominantly savoury dishes using a range of cooking techniques 3. **Understand seasonality, and know** where and how a variety of ingredients are grown, reared, caught and processed	