St Margaret's CEVA Primary School Progression Map

Subject: Design and Technology

Intent:
Our DT curriculum will develop imaginative thinking in children to enable them to talk about what they like and dislike when designing and making. It will enable children to talk about how things work, and to draw and model their ideas. Throughout this curriculum children will be encouraged to select appropriate tools and techniques for making a product, whilst following safe procedures.

Autumn	EYFS	Key Stage 1		Key Stage 2			
	Year R Autumn 1/2	Year 1 Autumn 1	Year 2 Autumn 2	Year 3 Autumn 2	Year 4 Autumn 1	Year 5	Year 6 Autumn 1
Knowledge	Explore building a house from the story Three Little Pigs – thinking about what makes a house strong and what happened to the houses in the story.	**Freestanding structures** **Recap previous learning from EYFS** Learning about freestanding structures within our environment. Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings. **(E1)** Consider how to make their structures strong and stable. **(TK1)**	**Templates and joining textiles** **Recap joining materials. (Year 1)** Research Action Heroes. Research different capes for ideas on shape, pattern and how it can be worn. **(E1)** Investigate different ways of joining – glue, staples, sellotape and sewing. **(M1)**	**Sewing;** **2D shape to 3D product** **Recap previous learning of textiles and joining. (Year 2)** Exploring materials and considering appropriate materials for Ugg's trousers. Deconstruct old clothing to explore how materials are joined. **(E3)**	**Lever and linkages: Christmas** **Recap previous learning of mechanisms: sliders, levers, wheels and axels. (Year 1 and 2)** Investigate and analyse books and, where available, other products with lever and linkage mechanisms. **(E5)** Understand and use lever and linkage mechanisms. **(TK4)** Distinguish between fixed and loose pivots.	**Food technology: Jollof Rice** **Recap previous learning of food, cooking and nutrition. (Year 2 and 3)** Question, select, design, make and evaluate different cutting techniques and the equipment needed to make a healthy meal. **(M3)** Food tasting & grouping. Understanding food preparation equipment and how to use them safely. Knowledge of how and where food is grown, reared, caught and processed. **(CN5)** Use knowledge about the different food	**Electrical system: Making a steady hand toys** **Recap previous learning of electricity from Autumn 1. (Year 6)** Creating toys using their knowledge of electrical systems. **(TK5).** Investigate and research into toy inventor Frank Hornby and discuss his influences and creations. **(E5)** Research into toys – discussing what makes a good toy and what needs to be considered when designing one. **(E3)**

						groups to ensure food is healthy. **(CN3)**	Using their knowledge of computing, children will develop their knowledge of design by creating a computer aided design of their product **(D4)** <u>Life skills</u> Cooking a variety of sweet and savoury food: Wraps, cheesecake, quiches, bread **(CN3)** **(CN4)**
Skills	Constructs with a purpose in mind, using a variety of resources. Select from the resources available to create their own house for the three little pigs. Experiment to create different textures. Understands that different media can be combined to create new effects. Manipulates materials to achieve a planned effect.	Exploring existing products. Create ideas based on simple design criteria and their own experiences, explaining what they could make. **(D2)** Develop, model and communicate their ideas through talking, mock-ups and drawings. **(D2)** Designing and making their own Billy Goats Gruff Bridge. Designing and decorating to meet an agreed purpose. **(D1)** Joining materials using a range of glue / tape. **(M1)** Use simple finishing techniques suitable for the structure they are creating. **(M1)** Practise their scissor skills. Verbal evaluation of design.	Design an appealing cape for Traction man based on simple design criteria. Design annotating with words, adding colour and patterns. Develop, model and communicate their ideas as appropriate through talking, drawing and templates. **(D2)** Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. **(M2)** Choose joining method. Measure and cut accurately around the template. **(M1)** Use a needle and thread when exploring various joining techniques and possibly in final product. **(M1)**	Sketch a design for a pair of trousers for Ugg. Consider the appeal of item and how material is fit for purpose using annotations. **(D3)** Draw to scale a 2D shape to make a template. **(D4)** Measure and cut accurately. **(M3)** Use of needle and thread. Choose from a range of sewing stitches. Evaluate the trousers against a criteria considering function and purpose of the product. **(E5)** Suggest improvements to their design. **(E5)**	Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. **(D3)** Use annotated sketches and prototypes to develop, model and communicate ideas. **(D4)** 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. **(M4)** Evaluate their own products and ideas against criteria and user needs, as they design and make.	Design their own healthy meal using their research and knowledge of healthy foods, considering what types of foods they are including and whether it is a balanced meal. **(D3)** Learning different cutting holds. Practise skills in cutting, grating, dicing, slicing etc. **(CN4)** Understand how to be safe ad hygienic in the kitchen. Know which seasons various foods are available. Evaluating their final salad and considering what improvements they could make in the future. Discuss any difficulties they faced and why. **(E4)**	Carry out research into user needs and existing educational products. Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. **(D3)** Create a 3D design using computer aided design software of a usable puppet, considering how it will move. **(D4)** Making decisions about how to approach the making of the toy, solve problems on the way and reach the goal of the finished product. Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.

		Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. **(E2)**	Select from and use textiles according to their characteristics. **(M2)** Explore and evaluate a range of existing textile products relevant to the project being undertaken. **(E1)** Evaluate their ideas throughout and their final products against original design criteria. **(E2)**				Select the appropriate materials and tools to complete their project. **(M4)** Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. **(M3)** Use finishing and decorative techniques. Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development. **(E4)**

Spring	EYFS	Key Stage 1		Key Stage 2			
	Year R Spring 1/2	Year 1 Spring 1	Year 2 Spring 2	Year 3 Spring 2	Year 4 Spring 1	Year 5 Spring	Year 6 Spring 1
Knowledge	The hundred decker bus – the children are given the opportunity to make a whole class bus as each child makes their own deck and these are put together.	**Maths bunting** Create maths bunting from material. Consider how to make it eye catching and appealing whilst also informative. **(D1)**	**Food Technology** **Recap previous learning from EYFS** Explore recipes and packaging for Smoothies. Learn about basic food hygiene. Discuss the basic principles of a healthy and varied diet. **(CN1)** Investigate which fruits are grown in Africa. **(CN2)** Taste a variety of fruits in order to inform choices.	**Structures** **Recap previous learning of structures. (Year 1)** Research the history of labyriths and link to their history topic, Ancient Egyptians. **(E5)** Consider how to make the structure strong and robust. **(TK3)**	**Structures: Pavilions –Monarchs** **Recap previous learning of structures and how to strengthen them. (Year 1 and 2**) Research pavilions designed for monarchs – what makes them fit for a monarch showing wealth and status. **(D3)** Research the historical aspect of Romans using levers and linkages. Recap and ensure an understanding of how to make it strengthen and reinforce the structure. **(TK3)**	**Mechanical systems: Flying/Moving dragon** **Recap previous learning of mechanisms – sliders, levers, wheels and axels. (Year 1, 2 and 4).** Research how gears and pulleys can be used to speed up, slow down or change the direction of movement. **(TK4)** Research a variety of different mechanical systems.	**Templates, joining textiles, sewing: pencil cases.** **Recap previous learning of joining materials, sewing and stitches. (Year 1, 2 and 3)** To begin to understand how to strengthen the joining of textiles and research a variety of stitches. **(E3) (TK3).** use research and develop design criteria to inform the design of appealing products **(D3)** <u>Life skills</u> Creating a variety of sweet and savory dishes: Chocolate cake, butter, Japanese rice, strawberry muffins. **(CN3) (CN4)**

Skills	Uses simple tools and techniques competently and appropriately. Selects appropriate resources and adapts work where necessary. Selects tools and techniques needed to shape, assemble and join materials they are using. Uses simple tools and techniques competently. Work together to create a whole class project. Begin to generate ideas for a design and consider what steps are needed to complete their idea.	Design using simple shapes or drawings using their knowledge of maths to support their designs. Develop, model and communicate their ideas through talking and drawings. **(D2)** Plan by suggesting what to do next. Select and use tools, skills and techniques, explaining their choices. **(M2)** Cut material using scissors. Explore different methods to join material. **(M1)** Evaluating their work using simple phrases and referring to the drawing of their idea. Discuss how well their bunting has been made and whether it meets the original design criteria. **(E2)**	Design a class recipe. Independently design appealing packaging and annotate with words and phrases. **(D1)** Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. **(E1)** Cutting, tasting and evaluating a range of fruits to inform recipe. **(M1)** Discuss the appeal of the packaging and the audience it is aimed at. Communicate these ideas through talk and drawings. **(D2)** Independently design appealing packaging and annotate with words and phrases. Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. **(M1)** Use a food blender under adult supervision. Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. **(M2)** Evaluate the smoothie for flavour/taste and discuss alternative fruits that could be used in the recipe. **(E2)**	Design pyramid referring research. Draw 2D and 3D sketches with annotations. **(D4)** Develop ideas through discussion with peers. Measure, cut and fold accurately. Experiment with different methods of securing their structures and use this information to strengthen, stiffen and reinforce their product. **(TK3)** Evaluate product throughout building process to adapt for strength and stability. Evaluate the structure against a design criterion. Comment on their peer's work and consider the views of others to improve their own work. Verbalize and share successes and discuss how to adapt the design in the future. **(E4)**	Sketch a design for a pavilion for a monarch. Consider the appeal and durability of the structure. **(D4)** Consider the aesthetic qualities of materials and how it is fit for purpose. **(D3)** Draw a 3D diagram of the product with accuracy. Annotate design with references to materials used, how it is constructed, techniques used to secure the structure. Construct a prototype of the structures frame to inform the design - strength. Choose from a range of materials and ways of joining the structure and materials. Evaluate the pavilion against a self-made criteria considering the function, purpose and appeal of the product. Suggest improvements to their design and comment on the work of peers.**(E4)**	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. **(D4)** 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. **(M3) (M4)** 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.**(E4)**	Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. **(D4)** Select, use and develop a good understanding of the tools and equipment needed to perform practical tasks, i.e. threading needles, tying knots **(M3).** Making decisions about how to approach their sewing, solving design problems on the way and reach the goal of the finished product. Evaluating your own and a peer's work, making suggestions of how to improve or enhance it. Consider the advice given from others as to how they could improve their final products and consider changes they could make. **(E4)**

Summer	EYFS	Key Stage 1		Key Stage 2			
	Year R Summer 1/2	Year 1 Summer 1/2	Year 2 Summer 1/2	Year 3 Summer 1/2	Year 4 Summer 1/2	Year 5 Summer 1/2	Year 6 Summer 1/2
Knowledge	Children begin to think about foods and what food can be grown, reared, sowed and harvested.	**Sliders and levers** Research space and planets – size of planets Investigate different ways of making moving pictures. Explore a range of existing books and everyday products that use simple sliders and levers. **(TK2)**	**Wheels and axles** **Recap previous learning of mechanisms, specifically sliders and levers. (Year 1)** Research a variety of mechanisms wheels and axles linked to a new invention for Claude (English topic). **(TK2)** Investigate how a catapult works. **(E1)**	**Healthy and varied diet** **Recap previous learning of food, cooking and nutrition. (Year 2)** Explore recipes and packaging for a healthy savoury wrap. **(CN4)** Learn about food hygiene. Discuss the principles of a healthy and varied diet. **(CN3)** Investigate and taste different foods to inform choices and incorporate in their wrap. Discuss where and how foods are grown and processed taking into account seasonality. **(CN5)**	**Simple circuits and switches; Making a nightlight** **Recap learning from science unit on electricity. (Year 4, Spring term)** To include a simple electrical circuit in their product that produces one outcome e.g. Light or sound. **(TK5)** Research different types of torches and lights. **(E3)** Research designers and inventors linked to torches and electrical devices in the home. **(E5)** Understand that mechanical and electrical systems have an input, process and an output. Design a product suitable for a particular purpose, aimed at a particular individual, from given user profiles. **(D3)**	**Frame structures; Bird Hides** **Recap skills and knowledge about structures and how to create a strong, reinforced structure. (Year 1 and Year 3)** Investigate and evaluate a range of existing frame structures (bird hides), considering what the important features are and why. **(D3) (E3)** Research how to strengthen, stiffen and reinforce 3-D frameworks. **(TK3)**	**Healthy and varied diet; Mayan food** **Recap previous learning of food, cooking and nutrition. (Year 2, 3 and 6)** Carry out research into packaging and consider the users need. **(E3)** Understand how the information on food packaging indicates whether food is healthy and balanced. **(CN3)** 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. **(CN5)** Ensure safety procedures are followed when cooking the wrap. <u>Life skills</u> Creating a variety of sweet and savory dishes: Pizza, crumble, chocolate truffles,

							cheese scones. **(CN3) (CN4)** Creating a usable felt pencil case with decorative stitching.
Skills	They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Children design and make, with support, their own bubble machine with a plastic bottle and a sock.	Design moving picture ideas based on simple design criteria and their own experiences using images and words. **(D1)** Consider how the picture is going to move explaining what they could make. **(TK2)** Plan by suggesting what to do next. Choose from a range of materials. Select and use tools, explaining their choices, to cut, shape and join paper and card. **(M1)** Use simple finishing techniques suitable for the product they are creating. Evaluate design and finished picture using words and simple explanation about why they like it. **(E2)**	Make a collaborative design of the catapult with annotations. **(D2)** Share ideas. Selecting appropriate material for the design. **(M2)** Select appropriate tools for cutting and joining. **(M1)** Learn how to safely use hacksaws. Measure and cut wood and/or doweling. Assemble the catapult using different mechanisms to make it work and using different materials. **(TK2)** Evaluate the mechanism against a set of design criteria and its functionality. **(E2)** Make suggestions about how they would improve or change the design.	Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. **(D3) (D4)** Applying their understanding of a balanced and healthy diet within their design. **(CN3)** Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. **(D4)** Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select and use appropriate utensils and equipment to prepare and combine ingredients. **(M3) (M4)** Select from a range of ingredients to make appropriate food products, thinking	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. **(D3)** Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. **(M3)** Select from and use a wider range of materials and components, including construction materials, textiles and electrical components, according to their functional properties and aesthetic qualities. **(M4)** Investigate and analyse a range of existing battery-powered products. **(E5)** Evaluate their ideas and products against their own design criteria and identify the strengths and areas for	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. **(D4) (D3)** 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. **(M3)** Use finishing and decorative techniques suitable for the product they are designing and making. Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and	Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. **(D4)** 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. **(D3)** 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. **(M3)** Make, decorate and present the food product appropriately for the intended user and purpose.

				about sensory characteristics. 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.**(E4)**	improvement in their work. **(E4)**	carrying out appropriate tests. **(E4)**	Carry out sensory evaluations of a range of relevant products and ingredients. **(E3)** 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. **(E4)** Understand how key chefs have influenced eating habits to promote varied and healthy diets. **(E5)**

Impact (End Points)						
EYFS	**Key Stage 1**		**Key Stage 2**			
Year R	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Reception children can safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. They can share their creations, explaining the process they have used. Children make use of props and materials when role playing characters in narratives and stories.	Children will be able to design a product to meet an agreed design criteria. Children will be able to select resources from a range offered and use cutting and joining techniques to create their product. Children can begin to suggest changes to their design which are not just aesthetic.	Children will be able to use a range of cutting and joining techniques. Children will be able to make simple plans, and design according to a criteria.	Children should know how shapes and structures can be used to make effective products. They should be able to select appropriate materials for their final pieces of work. Children should have a clear understanding of characteristics and properties of food ingredients. Children can evaluate their final product and suggest improvements to their designs.	Children would know a variety techniques to join different materials. They would be able to select appropriate material fit for the purpose. Children will be able to investigate and evaluate a range of existing products. They can evaluate their final product and suggest improvements to their designs.	Children would have consolidated their knowledge of different mechanisms and how to adapt and design their own. Children will confidently use cutting techniques safely to prepare folding mechanisms. They will have a good understanding of different food cutting skills and holds in order to design and make their own. They will able to use skills to create a range of projects that link to their foundation topics and wider world issues.	Children have an embedded knowledge of different materials and their suitability for different products or purposes. Children can confidently use the tools and equipment provided to create a product safely. Children have a very good understanding of the purpose and target market of a product. They will able to use refined skills to create a range of projects that link to their foundation topics and wider world issues.

Vocabulary

EYFS	Key Stage 1		Key Stage 2			
Year R	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Crayons	Idea	Design	Product	Product	Contemporary	Simultaneous
Paint	Waterproof	Material	Criteria	Criteria	Prior	Attribute
Pastels	Plan	Fabric	Material	Material	Subsequent	Controversy
Felt tips	Pictures	Textile	Selection	Wealth	Enduring	Authentic
Chalk	Fat	template	Pattern	Status	Dominate	Marquette
Charcoal	Seeds	Template	Design	Aesthetic	Context	Concentric
Line	Melt	Join	Appearance	Selection	Complex	Radial
Pattern	Solid	Sew/stitch	Seam	Design	Sparse	Intersecting
Colour	Liquid	Needle	Sew/stitch	Appearance	Exceptional	Harvest
Shape	Set	Thread	Needle	Justify	Pulley	Herbs
Brush	Sliders	Improvement	Thread	Prototype	Cam	Raising agents
Thin	Levers	Structure	Running stitch,	Sketch	Lever	Market research
Thick	Measuring	Construct	blanket stitch etc.	Technique	Gear	Culture
Scissors	Movement/move	Mechanism	Designers	Cutting	Diagonal	Society
Knife	Arrange	Wheel	Tailor	Joining	Rotation	Constraints
Fork	Choose	Axles	Fabric	Evaluate	Angle	Justify
Spoon	Paper	Catapult	Textile	Former	Inform	
Hammer	Card	Movement	Template	Latter	Appeal	
nails	Circle	Invention	Join	Phase	Positives	
Paper	Oval	Safety	Equipment	Trend	Drawbacks	
Card	First/second etc.	Hacksaw	Technique	Audience	Linkages	
Wood	Near	Wood	Construction	Impact	Gears	
Felt	Far	Doweling	Structure	Unique	Pulleys	
Clay	Up	Wash	Improve	Characteristic	Monitor	
Kneading	Down	Clean	Strengthen	Aesthetic	Control	
Rolling	Share	Germs	Suggest	Mathematical		
Model	Painting	Surface	Explain	Increase		
Print	Printing	Plants	Product	Decrease		
Rubbing	Before	Choose	Reinforce	Intricate		
Weaving	After	Senses	Audience	System		
Threading	Next	Product	Hygiene	Input		
Cutting	Last	Packaging	Germs	Process		
Fabric	When	Peeler	Surface	Output		

Circle Square Rectangle Triangle Big Bigger Small Smaller Wash Clean Dirty Orange Banana Carrot Apple Grapes Tomatoes Peas Potatoes Apron Mix Build Make	Then Older Newer Below Above Wash Clean Seeds	Knife Recipe Flavour – sweet, sour, sharp Peel Dice Slice Healthy Diet Kitchen	Senses Product Packaging Peeler Knife Grater Recipe Ingredients Flavour – sweet, sour, sharp, savoury Peel Dice Slice Healthy/unhealthy Diet Weight Scales Sketch Annotate			

National Curriculum Links Key:

Subject content

Key stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be taught to:

Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria **(D1)**
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology **(D2)**

Make

- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] **(M1)**
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics **(M2)**

Evaluate

- explore and evaluate a range of existing products **(E1)**
- evaluate their ideas and products against design criteria **(E2)**

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable **(TK1)**
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. **(TK2)**

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 fit for purpose, aimed at particular individuals or groups **(D3)**
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **(D4)**

Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately **(M3)**
- 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 **(M4)**

Evaluate

- investigate and analyse a range of existing products **(E3)**
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work **(E4)**
- understand how key events and individuals in design and technology have helped shape the world **(E5)**

Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures **(TK3)**
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] **(TK4)**

- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] **(TK5)**
- apply their understanding of computing to program, monitor and control their products. **(TK6)**

Cooking and nutrition

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:

Key stage 1

- use the basic principles of a healthy and varied diet to prepare dishes **(CN1)**
- understand where food comes from. **(CN2)**

Key stage 2

- understand and apply the principles of a healthy and varied diet **(CN3)**
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques **(CN4)**
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. **(CN5)**