

## Design and Technology

### Non-Negotiable Concepts, Key Skills, Subject Knowledge and Vocabulary

#### National Curriculum Statement:

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

#### When designing and making, Key Stage 1 pupils should be taught to:

- 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
- 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 and evaluate a range of existing products ☐ evaluate their ideas and products against design criteria
- build structures, exploring how they can be made stronger, stiffer and more stable ☐ explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

#### In cooking and nutrition, Key Stage 1 pupils should be taught to:

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

#### When designing and making, Key Stage 2 pupils should be taught to:

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
- 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
- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ☐ understand how key events and individuals in design and technology have helped shape the world
- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]

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

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**In Cooking and Nutrition, Key Stage 2 pupils should be taught to:**

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

**Concepts:**

**A: Cooking and Nutrition-** Recognise and know foods that are good and bad for me, create simple healthy menus and recipes whilst considering seasonality and availability.

**B: Design-** Describe how something works, design simple plans and generate and develop ideas, considering consumer needs, functionality, appeal and innovation. Conduct market research.

**C: Make-** Make a product that moves, select from and use appropriate materials fit for purpose and use tools safely. Create a prototype, refining and justifying ideas and products.

**D: Evaluate-** Look at and recognise current products knowing what they are and how and why they are used. Explain what went well with the work and suggest improvements. Explore inventors, their inventions and the impact on our lives today. Consider peer feedback and consumer needs.

**E-Technical Knowledge-** Select materials and adhesives based on their properties and uses, decide how to reinforce products, develop electrical and mechanical product devices and computer programs to monitor and control.

Year Group	Concept	Key Skills	Subject Knowledge and Understanding	Key Vocabulary
<b>Year 1</b>  <b>Scarecrow's Wedding Healthy Picnic A1, A2</b>	<b>A-Cooking and Nutrition</b>	<ul style="list-style-type: none"> <li>• <b>Recognise</b> foods that are good for me. A1</li> <li>• <b>Recognise</b> which foods are bad for me. A2</li> </ul>	Children know: <ul style="list-style-type: none"> <li>• Which foods are bad for me? A2</li> <li>• Which foods are good for me? A1</li> <li>• Why food is healthy/unhealthy? A1/A2</li> </ul>	Food, food group, eat, good, bad, healthy, unhealthy, know, recognise, choose, decide, cook, nutrition, nutritious, sugar, fat.
<b>Design, make and evaluate a Christmas pop up card.</b> <b>B1, B2, B3, C1, C2, C3, D1, D2, E1, E2</b>	<b>B-Design</b>	<ul style="list-style-type: none"> <li>• <b>Describe</b> how something works. B1</li> <li>• <b>Design</b> simple plans before making objects. B2</li> <li>• <b>Generate</b> and <b>develop</b> my ideas by talking and drawing. B3</li> </ul>	Children know: <ul style="list-style-type: none"> <li>• How something works? B1</li> <li>• How to talk about their ideas and plans. B2, B3</li> <li>• How to plan and label their design according to the specifications outlined. B2/B3</li> </ul>	Describe, plan, design, work, simple, objects, make, develop, generate, talking, drawing, ideas, existing products, research, market.
<b>Design and make a Space Buggy</b> <b>B1, B2, B3, C1, C2, C3, D1, D2, E1, E2.</b>	<b>C-Make</b>	<ul style="list-style-type: none"> <li>• <b>Make</b> a product that moves. C1</li> <li>• <b>Select</b> from and <b>use</b> a range of materials and components e.g.</li> </ul>	Children know: <ul style="list-style-type: none"> <li>• How something moves? C1</li> <li>• some properties of materials and components. A1, A2, C2</li> </ul>	Make, product, move, select, use, range, materials, components, textiles, construction, ingredients, tools, safe, equipment.

		<p>construction materials, textiles and ingredients. A1, A2, C2</p> <ul style="list-style-type: none"> <li>• <b>Use</b> my tools safely. C3</li> </ul>	<ul style="list-style-type: none"> <li>• how to use a range of materials and components. C2</li> <li>• how to use tools. C3</li> <li>• how to use tools safely. C3</li> </ul>	
	<b>D-Evaluate</b>	<ul style="list-style-type: none"> <li>• <b>Look</b> at current products and <b>recognise</b> what they are for, how they work and why. D1</li> <li>• I can <b>explain</b> what went well with my work and <b>suggest</b> how I would improve it. D2</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• what a product is. D1</li> <li>• what a product is for. D1</li> <li>• how a product works and why? D1</li> <li>• What went well with their work. D2</li> <li>• How to make improvements to their work. D2</li> </ul>	<p>Look, product, recognise, how, what, why, work, for, explain, well, suggest, improve, better, evaluate, know.</p>
	<b>E-Technical Knowledge</b>	<ul style="list-style-type: none"> <li>• <b>Select</b> materials based on their properties. E1</li> <li>• <b>Select</b> an appropriate adhesive based on the materials I am using. E2</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• Some properties of materials E1</li> <li>• Suitability of materials to purpose</li> <li>• Know what an adhesive is E2</li> <li>• Know the effect of an adhesive on a material. E3</li> </ul>	<p>Select, material, properties, appropriate, adhesive, suitable, effect, purpose, product, use.</p>
<p><b>Year 2</b></p> <p><b>Super Smoothies</b> A1, B1, B2, C1, C2, C3</p> <p><b>3D Pirate Ships</b> B1, B2, C1, C2, C3, D1, D2, D3</p> <p><b>Bug Houses</b> B1, B2, C1, C2, C3, D1, D2, D3, E1, E2</p> <p><b>Carnival Headdresses</b> B1, B2, C1, D1, D2, D3, E2</p>	<b>A-Cooking and Nutrition</b>	<ul style="list-style-type: none"> <li>• <b>Describe</b> the properties of the materials/ingredients I am using. A1</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• Some properties of materials A1</li> <li>• Some properties of ingredients. A1</li> <li>• Know which ingredients are good /bad for me. Y1/A1/A2</li> </ul>	<p>Describe, properties, materials, ingredients, good, bad, healthy, unhealthy, food, cook, nutritious.</p>
	<b>B-Design</b>	<ul style="list-style-type: none"> <li>• <b>Develop</b> own ideas from initial starting points. B1</li> <li>• <b>Create</b> a design and plan how to carry it out. B2</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• How to start a design. B1</li> <li>• How to use their own ideas. B1, B2</li> <li>• How to start planning. B2</li> </ul>	<p>Develop, ideas, start, design, plan.</p>
	<b>C-Make</b>	<ul style="list-style-type: none"> <li>• <b>Choose</b> the best tools and materials. C1</li> <li>• <b>Join</b> things (materials, components) in different ways. C2</li> <li>• <b>Measure</b> materials to use in a model or structure. C3</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• Which tools or materials to use. C1</li> <li>• which tools and materials are fit for purpose? C1</li> <li>• Know some properties of materials. C1</li> <li>• How materials and components can be joined. C2</li> <li>• Different methods for joining things together. C2</li> </ul>	<p>Choose, best, tools, materials, join, components, different, measure, make, structure, model, purpose, suitable, properties.</p>

			<ul style="list-style-type: none"> <li>• Know how to measure using suitable equipment. C3</li> <li>• Know how to manipulate measuring tools, models and structures for measuring. C3</li> </ul>	
	<b>D-Evaluate</b>	<ul style="list-style-type: none"> <li>• <b>Explain</b> choices of materials and techniques. D1</li> <li>• <b>Explain</b> what went well and how to improve it? D2</li> <li>• <b>Evaluate</b> a range of existing products. D3</li> </ul>	Children know: <ul style="list-style-type: none"> <li>• About the properties of their materials and suitability for purpose. D1</li> <li>• About techniques they have chosen and why. D1</li> <li>• What went well? D2</li> <li>• How to make improvements. D2</li> <li>• About other products and their features and benefits. D3</li> </ul>	Explain, choice, materials, techniques, well, better, improve, improvements, evaluate, range, existing, products, features, benefits, suitability, purpose.
	<b>E- Technical Knowledge</b>	<ul style="list-style-type: none"> <li>• <b>Select</b> and <b>explain</b> why I have decided to use certain materials. E1</li> <li>• <b>Select</b> appropriate adhesives and <b>explain</b> why they are suitable. E2</li> </ul>	Children know: <ul style="list-style-type: none"> <li>• Choose materials and adhesives based on their properties. E1, E2</li> <li>• Know which materials and adhesives are fit for purpose. E1, E2</li> <li>• Say why certain materials and adhesives are suitable to use. E1, E2</li> <li>• Know why some materials and adhesives are not suitable to use. E1, E2</li> </ul>	Select, explain, materials, adhesives, properties, purpose, product, suitable, use.
<b>Year 3</b>  <b>Healthy food</b> <b>A1, A2, A3, D1</b>  <b>Stone Age Tools</b> <b>B1, B2, C3</b>	<b>A-Cooking and Nutrition</b>	<ul style="list-style-type: none"> <li>• <b>Create</b> a menu that is varied and healthy. A1</li> <li>• <b>Create</b> a step by step plan to show the order. A1</li> <li>• <b>Follow</b> a recipe using simple cooking techniques. A2</li> <li>• <b>Describe</b> how my combined ingredients come together. A2</li> </ul>	Children know: <ul style="list-style-type: none"> <li>• What tools and equipment they need? A1</li> <li>• which foods are healthy? A1</li> <li>• how to sequence a menu A1</li> <li>• follow the sequence of a recipe A2</li> <li>• know some cooking techniques e.g slicing, mixing. A2</li> </ul>	Cooking, nutrition, tools, equipment, create, menu, healthy, food, plan, order, techniques, follow, describe, ingredients, recipe, grown, reared, caught, processed.

<p><b>Volcanoes</b> C1, C3, D1 E1</p> <p><b>Create a mechanical toy</b> C3, E1, E2</p> <p><b>Make a light up torch</b> C2, E1</p>		<ul style="list-style-type: none"> <li>• <b>Recognise</b> where and how ingredients are grown, reared, caught and processed. A3</li> </ul>	<ul style="list-style-type: none"> <li>• The changes that occur when ingredients are combined together. A2</li> <li>• That ingredients can be natural or man made. A3</li> <li>• That some animals and plants are reared, caught or grown for food</li> <li>• that food can be processed by machinery. A3</li> </ul>	
	<p><b>B-Design</b></p>	<ul style="list-style-type: none"> <li>• <b>Describe</b> the purpose of my products. B1</li> <li>• <b>Explain</b> how design features of my product will work. B1</li> <li>• <b>Choose</b> a textile both for its appearance and qualities. B2</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• The purpose of a product. B1</li> <li>• How certain features within a product work. B1</li> <li>• Some properties of a textile. B2</li> </ul>	<p>Purpose, product, features, textile, work, properties, design, appearance, qualities, select, describe, explain.</p>
	<p><b>C-Make</b></p>	<ul style="list-style-type: none"> <li>• <b>Select</b> and safely <b>use</b> a wider range of tools when making my product. C1</li> <li>• <b>Select</b> and <b>use</b> a wider range of materials and components e.g. construction material, textiles and ingredients to make sure my product looks attractive. C2</li> <li>• Accurately <b>measure</b> and <b>form</b> the sections of my product making cuts and holes. C3</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• which tools from a range are suitable to use for use when creating product. C1</li> <li>• which materials and components are fit for purpose? C2</li> <li>• the properties of a range of materials and components. C2</li> <li>• how to measure an object accurately C3</li> <li>• which equipment to use to measure an object. C3</li> <li>• how to make holes and cuts in material. C3</li> <li>• which tools to use to make cuts and holes. C3</li> </ul>	<p>Tools, select, use, materials, components, construction, materials, textiles, ingredients, product, measure, sections, cuts, holes, create, make.</p>
	<p><b>D-Evaluate</b></p>	<ul style="list-style-type: none"> <li>• <b>Adapt</b> my design criteria E1</li> <li>• <b>Develop</b> my product to meet a range of requirements. E1</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• How to make changes to their ideas/steps. D1</li> <li>• How to understand the purpose/uses of their product. D1, D2</li> </ul>	<p>Evaluate, adapt, design, product, requirements, criteria, steps, purpose, develop, adjust.</p>

			<ul style="list-style-type: none"> <li>• Change their product in view of other requirements/needs D2</li> <li>• Where and how to adjust their product. D2</li> </ul>	
	<b>E-Technical Knowledge</b>	<ul style="list-style-type: none"> <li>• <b>Decide</b> how to strengthen, stiffen and reinforce a complex structure. E1</li> <li>• <b>Make</b> a product that uses both electrical and mechanical components. E2</li> <li>• <b>Develop</b> an electrical component. E2</li> <li>• <b>Develop</b> a mechanical component. E2</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• Which tools to use to stiffen, strengthen and reinforce. E1</li> <li>• Know which techniques to use to strengthen, stiffen and reinforce. E1</li> <li>• Which materials to use to stiffen, strengthen and reinforce E1</li> <li>• Where to apply reinforcements on a structure to best effect. E1</li> <li>• What an electrical component is and how it works E2</li> <li>• What a mechanical component is and how it works. E2</li> </ul>	Decide, strengthen, stiffen, reinforce, tools, complex, structure, electrical, mechanical, components, product, make, develop, effect, materials, techniques.
<p><b>Year 4</b></p> <p><b>Healthy fruit skewers/fruit salads</b> A1, A2, A3, B1, B2, B3, D1, D3</p> <p><b>Norman helmets</b> B3, C1, D1, D3</p> <p><b>Clay potion bottles (linked to art)</b> B1, B2, B3, D1, D3, C1</p> <p><b>Anglo-Saxon houses</b> B1, B2, D1, D3, C1</p>	<p><b>A-Cooking and Nutrition</b></p>	<ul style="list-style-type: none"> <li>• <b>Write</b> a simple recipe, using my cooking techniques to <b>create</b> the dish e.g. scones. A1</li> <li>• <b>Describe</b> seasonality in food production. A3</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• Basic food hygiene A1</li> <li>• Safety when cooking A1</li> <li>• The difference between food that is grown and food that is processed. A2</li> <li>• Why foods are grown at certain times of the year. A3</li> </ul>	Cooking, nutrition, food, produce, cooking, techniques, recipe, create, hygiene, tools, safety, grown, processed, seasons, seasonality, production.
	<b>B-Design</b>	<ul style="list-style-type: none"> <li>• <b>Produce</b> a plan to show how my product features will be appealing to myself and others. B1</li> <li>• <b>Recognise</b> if I need to make the product more appealing by changing features e.g. musical instruments, submarines. B2</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• How to create a plan B1</li> <li>• what is considered appealing B1, B2</li> <li>• how to embellish/enhance/change features. B1, B2</li> <li>• which materials/components have an appealing quality and why B1, B2</li> <li>• what my user needs B3</li> </ul>	Produce, plan, product, features, appealing, user, needs, requirements, create, changes, adapt, materials, components, research, purpose, design.

<p><b>Japanese chindogus</b> <b>B1, B2, B3, D1, D2, D3, C1</b></p> <p><b>Automata</b> <b>(Mechanical toys)</b> <b>B1, B2, D1, D3, C1, E1, E2</b></p>		<ul style="list-style-type: none"> <li>• <b>Create</b> fit for purpose products by researching the needs of the user e.g totem poles, potion bottles, musical instruments, submarines. B3</li> </ul>	<ul style="list-style-type: none"> <li>• how I can change my product to meet those needs B3</li> <li>• how to use an IPAD, books, or other products for research purposes. B3</li> </ul>	
	<p><b>C-Make</b></p>	<ul style="list-style-type: none"> <li>• <b>Discuss</b> why certain tools and materials have been <b>selected. C1</b></li> <li>• <b>Use</b> selected tools and materials carefully (including measuring) e.g. textures and design of potion bottles. C1</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• The benefits of using certain tools and materials C1</li> <li>• Know the properties of certain tools and materials. C1</li> <li>• How to use tools safely C1</li> <li>• Which equipment to use for measuring. C1</li> <li>• How to measure accurately. C1</li> </ul>	<p>Discuss, tools, materials, select, benefits, properties, texture, design, make, measure, equipment, safety.</p>
	<p><b>D-Evaluate</b></p>	<ul style="list-style-type: none"> <li>• <b>Evaluate</b> my product referring to both its appearance and the way it works. D1</li> <li>• <b>Discuss</b> inventors and their contribution to design and technology. D2</li> <li>• <b>Suggest</b> some improvements and say what was good and not so good about my original design. D3</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• Some strengths and weaknesses with their design and product. D1, D3</li> <li>• how it works D1</li> <li>• strengths and weaknesses with how it works and looks D1</li> <li>• what is good and not so good about their design. D3</li> <li>• how to improve the product. D1</li> <li>• the names of some inventors. D2</li> <li>• what this person invented D2</li> <li>• how this person's invention contributes to everyday life. D2</li> </ul>	<p>Evaluate, design, appearance, works, inventors, contribution, technology, everyday life, strength, weaknesses, good, original, invention, improvements.</p>
	<p><b>E-Technical Knowledge</b></p>	<ul style="list-style-type: none"> <li>• <b>Add</b> a mechanical system to my product. E1</li> <li>• <b>Suggest</b> improvements when using a mechanical system. E2</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• How a mechanical system works. E1</li> <li>• How to include the mechanical system to a product. E2</li> <li>• What are the strengths and weaknesses with their mechanical system?</li> </ul>	<p>Mechanical system, product, improvements, strengths, weaknesses, technical.</p>

			<ul style="list-style-type: none"> <li>How to make the system more effective/efficient.</li> </ul>	
<p><b>Year 5</b></p> <p><b>Seasonal couscous salad</b> A1, A2, B1, B2, C1, C3, D1, D3</p> <p><b>Medieval gingerbread</b> A1, B1, C1, C3, D1, D2, D3</p> <p><b>Prototype torches to explore Alchemy island</b> B2, C1, C2, C3, D2, E2, E3</p> <p><b>Rockets</b> B1, B2, C1, C2, C3, D1, D3</p>	<b>A-Cooking and Nutrition</b>	<ul style="list-style-type: none"> <li><b>Create</b> more detailed recipes with step by step plan that someone else could follow. A1</li> <li><b>Discuss</b> why the recipe is varied and healthy. A1</li> <li><b>Make</b> recipes that use ingredients appropriate for the season. A1</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>How to be hygienic and safe. A1</li> <li>The structure of a recipe. A1</li> <li>The chronological steps for a recipe. A1</li> <li>Suitable cooking techniques e.g. chopping, slicing, mixing, blending. A1</li> <li>Accessibility of ingredients. A1, A2</li> <li>Which ingredients are healthy? A1</li> <li>Seasonality of ingredients. A2</li> </ul>	<p>Cooking, nutrition, recipes, steps, plan, discuss, varied, healthy, hygiene, safety, ingredients, seasonal, suitable, accessible, techniques, diet.</p>
	<b>B-Design</b>	<ul style="list-style-type: none"> <li><b>Design</b> innovative, functional and appealing products aimed at a particular group. B1</li> <li><b>Present</b> a range of alternative ideas using annotated sketches, cross-sectioned drawings and exploded diagrams and <b>suggest</b> pros and cons for each. B2</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>The needs of my particular group. B1</li> <li>What my product needs to do B1</li> <li>How my product can be useful to others. B1</li> <li>How to formulate more than one idea for a product. B2</li> <li>How to annotate sketches B2</li> <li>Draw cross-sections B2</li> <li>Draw exploded diagrams B2</li> <li>What is good and not so good about each idea. B2</li> </ul>	<p>Design, innovative, innovate, function, functional, group, product, ideas, present, annotate, sketches, drawings, cross-section, exploded, suggest, pros, cons.</p>
	<b>C-Make</b>	<ul style="list-style-type: none"> <li><b>Use</b> appropriate tools and materials expertly for my products. C1</li> <li><b>Make</b> a prototype. C2</li> <li><b>Use</b> accurate measurements so that everything is precise. C3</li> </ul>	<p>Children can:</p> <ul style="list-style-type: none"> <li>Understand why these tools and materials are being used. C1</li> <li>What a prototype is C2</li> <li>What works well or not so well with the prototype. C2</li> <li>How to adapt the prototype or improve it. C2</li> </ul>	<p>Make, tools, appropriate, materials, products, expertly, prototype, pro, con, measure, accurate, precise.</p>

			<ul style="list-style-type: none"> <li>• How to measure an object with the correct equipment. C3</li> <li>• Measure accurately. C3</li> </ul>	
<b>D-Evaluate</b>	<ul style="list-style-type: none"> <li>• <b>Discuss</b> how innovative a product is and suggest improvements. D1</li> <li>• <b>Recognise</b> how inventors have been innovative with their products and the effect of this. D2</li> <li>• <b>Evaluate critically</b> the appearance and function against the original design criteria. D3</li> <li>• <b>Evaluate critically</b> using the views of others. D3</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• My product and its user D1</li> <li>• And understand the new ideas surrounding my product D1</li> <li>• How my new ideas/adaptations improve the product. D1</li> <li>• Where and how the product could be further improved. D1</li> <li>• The names of some inventors D2</li> <li>• The use of the inventions D2</li> <li>• And understand how the product has been advanced D2</li> <li>• How this impacts the user in a positive and negative way D2</li> <li>• How innovations have enhanced the product. D2</li> <li>• How to refer to success criteria. D3</li> <li>• My opinion as to how well the product functions against criteria D3</li> <li>• My opinion as to how appealing it is against criteria D3</li> <li>• To listen to and accept critical evaluations from peers. D3</li> </ul>	Evaluate, critically, discuss, innovative, innovations, function, appeal, improvements, product, ideas , inventor, invention, effect, adaptations, methods, design, original, criteria, feedback, views.	
<b>E-Technical Knowledge</b>	<ul style="list-style-type: none"> <li>• <b>Investigate</b> using an electrical system in my product. E1</li> <li>• <b>Create</b> own electrical system e.g. using switches, bulbs, buzzers and motors. D2</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• How to implement an electrical system in my product. D1</li> <li>• How an electrical system works D1</li> <li>• How the electrical system can / will work in my product. D1 d2</li> </ul>	Technical, investigate, product, electrical system, create, buzzers, switches, motors, bulbs, impact, effect, change, recognise, components, create, change, combine.	

		<ul style="list-style-type: none"> <li>• <b>Recognise</b> the effect of changing my part of my electrical system and how this will impact on the use of my product. D3</li> </ul>	<ul style="list-style-type: none"> <li>• How electrical components work separately. D2</li> <li>• How to combine electrical components to make an electrical system D2</li> <li>• how to change part of an electrical system D3</li> <li>• and understand the pros and cons of making this change will affect my product. D3</li> </ul>	
<p><b>Year 6</b></p> <p><b>Designing 'heart healthy' meals.</b> A1, A2, B1, B2, C1, C2</p> <p><b>Designing an air-raid shelter</b> B1, B2, C1, C2</p> <p><b>Festival Drinks: Designing, Evaluating and Budgeting</b> A1, A2, B1, B2, C1, C2, D1, D2, E1, E2</p>	<b>A-Cooking and Nutrition</b>	<ul style="list-style-type: none"> <li>• <b>Create</b> detailed recipes with instructions. A1</li> <li>• <b>Explain</b> how the recipe is varied and healthy. A1</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• How to be safe when cooking A1</li> <li>• How to be hygienic when cooking A1</li> <li>• How to give precise and accurate instructions/timings/measurements A1</li> <li>• Which foods/ ingredients are healthy? A1</li> <li>• The nutritious content of certain foods / ingredients A1</li> <li>• acknowledge seasonality / availability of foods/ingredients A1</li> <li>• and understand the dietary requirements of the consumer. A1</li> </ul>	<p>Cooking, nutrition, nutritious, healthy, food, ingredients, recipe, create, detailed, varied, safe, hygienic, measurements, instructions, timings, seasonality, availability, dietary needs, consumer, content.</p>
	<b>B-Design</b>	<ul style="list-style-type: none"> <li>• <b>Conduct</b> market research to ensure my designs are functional, innovative and appropriate for a particular individual or group. B1</li> <li>• <b>Hold</b> feedback sessions in order to develop my designs and products. B2</li> <li>• <b>Consider</b> culture and society in my designs. B2</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• What market research is. B1</li> <li>• Formulate relevant questions. B1</li> <li>• Which demographic group to question. B1</li> <li>• How to listen to and accept others' viewpoints. B2</li> <li>• How to use feedback to aid design development. B2</li> </ul>	<p>Design, market research, conduct, questions, functional, innovative, individual, group, demographic, listen, ask, feedback, develop, development, product, culture, society, needs, consider.</p>

			<ul style="list-style-type: none"> <li>• And understand the cultural and societal needs of others when designing my product. B2</li> </ul>	
<b>C-Make</b>	<ul style="list-style-type: none"> <li>• <b>Justify</b> why I selected specific materials. C1</li> <li>• <b>Follow</b> my plan and refine if necessary, in order to meet all design criteria. C2</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• And understand why my materials are fit for purpose. C1</li> <li>• How the specific properties of the materials. C1</li> <li>• How the properties of the materials suit the purpose of the product/ design. C1</li> <li>• Which tools/ adhesives to use based on their function and suitability to the materials chosen. C1</li> <li>• My design criteria. C2</li> <li>• How to adapt and amend my plan as I go along.C2</li> <li>• How to adapt/amend my plan based on availability of materials. C2</li> <li>• What works well with my plan and what doesn't work so well as I go along. C2</li> <li>• How to meet the design criteria in full. C2</li> </ul>	<p>Make, design, justify, materials, specific, purpose, properties, specific, follow, plan, success criteria, product, tools, adhesives, adapt, amend, function, suitable, available.</p>	
<b>D-Evaluate</b>	<ul style="list-style-type: none"> <li>• <b>Create</b> a simple computer program to monitor and control my product. D1</li> <li>• <b>Suggest</b> how to amend my computer program to improve my product. D2</li> </ul>	<p>Children know:</p> <ul style="list-style-type: none"> <li>• What a computer program is. D1</li> <li>• the components needed for their computer program. D1</li> <li>• what an algorithm is. D1</li> <li>• how to make algorithms. D1</li> <li>• how to set up their algorithm on a computer. D1</li> <li>• how to control and monitor their product with the program. D1</li> </ul>	<p>Create, computer, program, monitor, control, product, suggest, amend, improve, components, algorithm, extend, adapt, amend, change, product, debug.</p>	

			<ul style="list-style-type: none"> <li>• how to debug a program. D2</li> <li>• how to adapt / change and extend their algorithm. D2</li> <li>• and understand why the program needs to be improved. D2</li> <li>• pros and cons pf program alongside product. D2</li> <li>• and understand how and why product needs to be improved.</li> <li>• And understand how product fits in with consumer needs and adapt/ amend or extend accordingly. D2</li> </ul>	
	<b>E-Technical Knowledge</b>	<ul style="list-style-type: none"> <li>• <b>Apply</b> my understanding of computing to program my product. E1</li> <li>• <b>Apply</b> my understanding of computing to control my product. E2</li> </ul>	<p>Children understand:</p> <ul style="list-style-type: none"> <li>• Algorithms E1, E2</li> <li>• Programming E1, E2</li> <li>• Debugging programs E1, E2</li> <li>• Adapting, amended and extending algorithms and programs. E1, E2</li> <li>• How effective the program is at monitoring and controlling the product. E1, E2</li> <li>• How to improve the control/monitoring function of my program. E1,E2</li> <li>• Where amendments need to be made in the program and why. E1, E2</li> </ul>	<p>Technical, understanding, computing, program, control, monitor, algorithm, debug, adapt, amend, extend, improve, effective.</p>