KEY KNOWLEDGE PROGRESSION DOCUMENT – Design and Technology

<table>
<tr><th colspan="4">Features</th></tr>
<tr><td colspan="2">At Early Years, the key knowledge progression document takes reference from the following documentation: Early Years Framework, Development Matters and Birth to 5 Matters
At Key Stage 1 and 2, the Key Knowledge Progression Document takes full account of the National Curriculum's requirements and groups these into the following strands:
Design
Make
Evaluate
Using Technical Knowledge
Cooking and Nutrition
These strands have been selected to reflect the key knowledge and skills in the National Curriculum subject content.
Children should work in a range of relevant contexts [for example in KS1, the home and school, gardens and playground, the local community, industry and the wider environment and for example in KS2, the home, school, leisure, culture, enterprise, industry and the wider environment].
Threaded throughout all Design and Technology learning should be the opportunity for children to create products following a design process. This should include consideration of the following concepts:
User
Purpose
Functionality
Design decisions
Authenticity
Innovation</td><td colspan="2">KKPDs match the ambition of the National Curriculum. In some instances, knowledge specified within the KKPDs is more ambitious than the National Curriculum. For example:
Understanding the importance of food hygiene and using recipes to create dishes are taught from the EY onwards and into KS1 (e.g., DT2.19 and DT2.20). These are not part of the National Curriculum requirements for KS1.
National Curriculum Aims:
develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
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.
understand and apply the principles of nutrition and learn how to cook.</td></tr>
<tr><td colspan="4">Substantive knowledge (S) is the truths or facts of a subject. Procedural knowledge (P) is the knowledge of how to do something. Disciplinary knowledge (D) is the knowledge, practices and traditions of a subject (that enable you to behave as a master of the subject e.g., as a Designer). These knowledge statements should be what pupils retain. In other words, this knowledge is within their long-term memory and will be remembered.</td></tr>
<tr><td colspan="4">Skills are dependent on specific knowledge. A skill is the capacity to perform and, in order to perform, a deep body of knowledge needs to be acquired and retained.</td></tr>
<tr><td colspan="4">When considering pupils' improvement in subject specific vocabulary, pupils could be provided with a knowledge organiser which contains the relevant words used for design technology for their age group.</td></tr>
<tr><th colspan="4">Early Years Framework</th></tr>
<tr><td></td><td>Early Years Statutory Framework: Educational Programme
Expressive Arts and Design</td><td>Early Learning Goal
Creating with Materials</td><td>Early Learning Goal
Fine Motor Skills</td></tr>
</table>

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Early Years	*The development of children's artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.*	*- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function* *- Share their creations, explaining the process they have used* *- Make use of props and materials when role playing characters in narratives and stories.*	*- Use a range of small tools, including scissors, paint brushes and cutlery*

National Curriculum Subject Content

Strand	Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
Key Stage 1	• *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.*	• *Use the basic principles of a healthy and varied diet to prepare dishes.* • *Understand where food comes from.*
Key Stage 2	• *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.*	• *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*

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Strand	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Design	• DTN.1 know what they are going to make before they make it **(P)**	• DTR.1 know what a product is (by exploring the whole and its parts) **(S)**	• DT1.1 know how to use own ideas to design a functional product **(P)**	• DT2.1 know the purpose and audience of their product through design criteria set by the teacher **(D)** • DT2.2 know how to use IT to communicate and research ideas where appropriate (e.g., taking pictures and annotating them) **(P)**	• DT3.1 know how to prove that a design is fit for purpose and meets the user's needs in line with the design criteria (based on disassembly of existing products where appropriate) **(P)**	• DT4.1 know how to use ideas from other people and/or existing products when designing (e.g. creating a mood board or disassembling existing products) **(P)**	• DT5.1 know how to design with a range of initial ideas using computer- aided design (CAD) where appropriate (e.g. CAD for packaging) **(P)**	• DT6.1 know how to justify design choices and planning in terms of audience, purpose and knowledge of how a product is assembled **(D)**	• DT7.1 know how to create their designs against a specific design specification for a specific audience **(P)**
	• DTN.2 know how to share what they are doing with their key worker **(P)**	• DTR.2 know how to discuss what they want to make **(P)** • DTR.3 know how to discuss problems **(P)** and how they might be solved as they arise, with an adult **(D)**	• DT1.2 know how to describe how their own idea works **(P)** • DT1.3 know how to explain to someone else how they want to make their product **(P)**	• DT2.3 know how to explain why they have chosen specific textiles or materials **(D)**	• DT3.2 know how to design a product and make sure that it looks appealing **(P)**	• DT4.2 know how to produce a design criteria to inform the designing and making process **(P)**	• DT5.2 know how to explain how a product will appeal to a specific audience **(P)** and how it meets the purpose through creating their own design criteria **(D)**	• DT6.2 know how to show that culture and society is considered in plans and design criteria **(D)**	• DT7.2 know how to show that their product can be made in a sustainable way **(P)** • DT7.3 know how to understand and research a product within the context of the world around them **(P)**

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Strand	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
		• DTR.4 know how to use drawing to create a simple plan **(P)**	• DT1.4 know how to draw a simple plan with support from templates before making **(P)**	• DT2.4 know how to draw a simple design and label the parts of their product (using patterns/templates where appropriate) **(P)**	• DT3.3 know how to draw annotated designs with labels that detail their material choices **(P)** and suitability of the given materials **(D)**	• DT4.3 know how to communicate ideas through annotated sketches that show different viewpoints of the product **(P)**	• DT5.3 know how to create annotated 3D drawings of their design on isometric or squared paper **(P)**	• DT6.3 know how to draw detailed 3D designs using exploded diagrams or cross-sectional drawing to display finer details (where appropriate converting these designs into templates/patterns) **(P)**	• DT7.4 know how to create a detailed step-by-step plan of the making process, utilising their knowledge of specific technical vocabulary and detailed sketches **(P)** • DT7.5 know how to design products using sketching skills, rendering and creating 3d designs where appropriate **(P)**
Make		• DTR.5 know that designs can help shape our thinking before making **(S)**	• DT1.5 know how to use own design plan to make something **(P)**	• DT2.5 know how to make a mock-up of their design where appropriate (e.g. paper patterns for puppets) **(P)**			• DT5.4 know how to make a prototype before making a final version **(P)**		• DT7.6 know how to create prototypes and patterns dependant on subject area **(P)**
	• DTN.3 know how to safely explore a variety of tools **(P)**	• DTR.6 know how to choose the right resources to carry out their own plan, (e.g. cutting tool for the playdough) **(D)**	• DT1.6 know how to use tools safely for a specific purpose (e.g. to cut, shape or to join) **(P)**	• DT2.6 know how to identify and name a selection of hand tools **(S)** • DT2.7 know how to choose tools and materials **(P)** and explain why they have chosen them **(D)**	• DT3.4 know how to select the most appropriate tools for a given task **(P)** • DT3.5 know how to choose the right equipment and materials (including textiles, construction materials and/or ingredients) **(D)**	• DT4.4 know which tools to use for a particular task and show knowledge of handling the tool **(P)** • DT4.5 know which material and/or component is likely to give the best outcome based on its properties **(D)**	• DT5.5 know **(S)** and use a range of tools and equipment competently and safely **(P)**	• DT6.4 know which tool to use for a specific practical task **(P)** • DT6.5 know how to use any tool correctly and safely **(P)** • DT6.6 know why a specific tool is best for a specific action **(S)**	• DT7.7 know the basic safety rules in the classroom and the workshop **(P)** • DT7.8 know the constraints of working in a school environment in comparison to industrial production **(S)**

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Strand	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
	• DTN.4 know how to explore joining different materials together (**S**)	• DTR.7 know different techniques for joining materials, such as how to use adhesive tape and different sorts of glue **(S)**	DT1.7 know how to assemble and join materials (including construction materials) using a variety of methods **(P)**	• DT2.8 know how to join materials and components in different ways **(P)** and explain their design choices **(D)** • DT2.9 know how to cut and join fabric to make a simple product **(P)**	• DT3.6 know how to select the most appropriate technique for shaping and joining **(P)** and justify their choices **(D)** • DT3.7 know how to work accurately to measure, make cuts and make holes **(P)**	• DT4.6 know how to mark, measure, cut and join accurately **(P)**			• DT7.9 know how to successfully mark and cut materials with increasing accuracy **(P)**
	• DTN.5 know how to thread **(P)**	• DTR.8 know how to thread continuously (e.g., using lacing boards) **(P)**	• DT1.8 know how to use simple sewing techniques with support or scaffolded resource **(P)**	• DT2.10 know how to use simple sewing techniques **(P)**		• DT4.7 know how to sew, weave or knit using a range of stitches **(P)**		• DT6.7 know how to pin, sew and stitch materials together to create a product **(P)**	• DT7.10 know how to use a range of temporary and permanent stitches by hand or machine **(P)**
		• DTR.9 know how to select the appropriate materials to create a desired aesthetic **(P)** justifying their choices (e.g., applying feathers to a bird model) **(D)**		• DT2.11 know how to carry out finishing techniques that have been modelled by the teacher **(P)**	• DT3.8 know how to choose and justify finishing techniques to improve the appearance of their products using a range of equipment including ICT **(D)**		• DT5.6 know how to carry out finishing techniques to enhance the appearance and function of their product **(P)** and justify their design choices **(D)**		• DT7.11 know how to apply finishing techniques to enhance a product justifying their design choices **(D)**
Evaluate			• DT1.9 know how to explore a range of existing products **(P)** and describe what makes it work well to inform their own choices **(D)**	• DT2.12 know how to explore and evaluate a range of existing products **(P)** describing what makes it work well and not so well to inform their own choices **(D)**	• DT3.9 know why existing products have or have not been successful (S) to inform their own designs **(D)**	• DT4.8 know how to evaluate existing products for both their purpose and appearance **(P)**	• DT5.7 know how to collect information from investigating existing products and research using ICT where appropriate **(P)** to inform their own designs **(D)**		• DT7.12 know how to analyse the work of past and present professionals and others **(D)** to develop and broaden their understanding **(P)**

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Strand	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
							• DT5.8 know key events and individuals that have led to existing products **(S)**	• DT6.8 know how key events and individuals have shaped the products that exist today **(S)**	
	• DTN.6 know what they like about their creation **(P)**	• DTR.10 know how to evaluate their product using appropriate vocabulary **(P)** including how they might make it better **(D)**	• DT1.10 know what went well with their own work against a design criteria **(P)**	• DT2.13 know what was successful and less successful in the model they have made against a design criteria **(P)**	• DT3.10 know why their own product has or has not been successful **(D)** • DT3.11 know how to improve their finished product in relation to the design criteria **(P)**	• DT4.9 know how to evaluate their own and others final product against the design criteria **(P)** • DT4.10 know how to evaluate and suggest improvements for their own designs **(D)**	• DT5.9 know how to evaluate appearance and function against the design criteria (P) and existing products or designs **(D)** • DT5.10 know to suggest alternative plans using feedback from others; outlining the positive features and draw backs **(D)**	• DT6.9 know how to evaluate their own and others' finished product against the design criteria **(P)** and existing products or designs **(D)** • DT6.10 know how to test and evaluate their own prototype on a specified audience **(P)** (where possible) and use feedback on final product **(D)**	• DT7.13 know how to outline and justify how they have met the design specification **(P)** and against other existing products **(D)** • DT7.14 know how to evaluate your own and others work giving feedback based on the design specification **(P)** • DT7.15 know the drawbacks of the product, design and making process and suggest improvements for all aspects **(D)**
Technical Knowledge	• DTN.7 know how to make their creation more stable (e.g. a tower) **(P)**		• DT1.11 know how to make their own model stronger / stiffer **(P)**	• DT2.14 know how to make a model stronger, stiffer (if appropriate) and more stable **(P)**	• DT3.12 know how to strengthen a product to stiffen, reinforce or create flexibility within a structure **(P)**			• DT6.11 know how to use knowledge to improve a made product by stiffening or reinforcing to create strength and/or flexibility **(P)**	• DT7.16 know and use the properties of materials and the performance of structural elements to achieve functioning solutions **(P)**
	• DTN.8 know how to distinguish between moving	• DTR.11 know how to select correct materials which allow for movement **(P)**	• DT1.12 know how to make a simple product that moves **(P)**	• DT2.15 know how to use wheels and axles, when appropriate to do so **(P)**	• DT3.13 know how to create a product with a simple mechanism **(P)** justifying their	• DT4.11 know how to apply scientific knowledge of electrical systems to their structural	• DT5.11 know how to apply scientific knowledge to their product design by using	• DT6.12 know how to use electrical systems correctly and accurately to	• DT7.17 know how more advanced mechanical systems used in their products

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	and non-moving elements **(S)**			• DT2.16 know how simple mechanisms work (e.g. sliders, levers, wheels and axels) **(S)**	choices (e.g. gears, pulleys, cams, levers and linkages) **(D)**	or mechanical product (e.g. series circuits incorporating switches, bulbs, buzzers and motors) **(P)**	pulleys, cams, gears, levers and linkages **(P)**	enhance a given product **(P)**	enable changes in movement and force **(S)** • DT7.18 know how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs] **(P)**
						• DT4.12 know how to use IT where appropriate to add to the quality of the product (program, monitor and control) **(P)**	• DT5.12 know how to use IT products to program, monitor and control their products **(P)**	• DT6.13 know which IT product would further enhance a specific product **(P)**	• DT7.19 know how to apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using programmable components [for example, microcontrollers] **(P)** • DT7.20 know materials are made up of natural and man-made fibres **(S)** • DT7.21 know how to enhance the aesthetic of a textile product using layering of materials (e.g.

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Strand	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
									applique and mola) **(P)**
Cooking and Nutrition	• DTN.9 know which foods they like to eat **(S)**	• DTR.12 know the names of well-known fruit and vegetables **(S)**	• DT1.13 know where fruit and vegetables come from **(S)**	• DT2.17 know where a variety of foods come from **(S)**	• DT3.14 know when food is available for harvesting and understand seasonality **(S)**	• DT4.13 know that animals are reared and caught for food **(S)**	DT5.13 know where and how certain foods are processed **(S)**	• DT6.14 know how to explain how food ingredients should be stored and give reasons **(P)**	
	• DTN.10 know there are healthy and unhealthy foods **(S)**	• DTR.13 know how to make some simple healthy food choices **(P)** • DTR.14 know the importance of healthy food choices **(S)**	• DT1.14 know which foods are healthy and which are not **(S)**	• DT2.18 know about foods that support good health and the risks of eating too much sugar **(S)**	• DT3.15 know what a balanced diet looks like **(S)**			• DT6.15 know the difference between a savoury and sweet dish and select ingredients accordingly **(S)**	• DT7.22 know how to prepare a savoury meal taking into consideration healthy choices **(P)**
	• DTN.11 know how to use a knife and fork when supported by an adult **(P)** • DTN.12 know how to wash hands before and after eating **(P)**	• DTR.15 know how to independently use a knife and fork **(P)** • DTR.16 know how to follow simple hygiene rules, (e.g. washing hands before eating, washing hands before cooking) **(P)**	• DT1.15 know how to cut food safely **(P)** • DT1.16 know how to use basic food handling, hygiene practices and personal hygiene **(P)**	• DT2.19 know how to follow safe procedures for food safety and hygiene **(P)**	• DT3.16 know how to demonstrate hygienic food preparation **(P)**	• DT4.14 know safe practices in the kitchen and can identify hazards (e.g. hazards when using an oven) **(S)**	• DT5.14 know how to be both hygienic and safe in the kitchen **(P)**		• DT7.23 know food hygiene and safety standards including use of the fridge and preparation of the cooking station **(S)**

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	• DTN.13 know how to combine different ingredients to create a dish with adult support **(P)**	• DTR.17 know how to follow a recipe to combine different ingredients to create a dish with adult support **(P)**	• DT1.17 know how to follow a given recipe to create a cold dish **(P)**	• DT2.20 know how to follow a given healthy recipe to create a hot dish **(P)**	• DT3.17 know how to weigh out ingredients and follow a given healthy recipe to create a dish **(P)**	• DT4.15 know how to weigh and measure accurately (timings, dry ingredients and liquids) to create a dish **(P)**	• DT5.15 know how to prepare a healthy meal by selecting the appropriate ingredients in the first place **(P)** and justifying choices (using appropriate cooking techniques) **(D)**		• DT7.24 know how to make one adaptation to the ingredients to enhance the recipe **(P)** and explain their reasoning **(D)** • DT7.25 know how to recognise and be able to use a variety of cooking equipment **(P)** • DT7.26 know the importance of weighing and measuring ingredients accurately **(S)** • DT7.27 know how to experiment with one type of useful bacteria (e.g. yeast) **(P)**

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Curriculum End Points

The KKPDs are the input to the curriculum. The curriculum end points are the output. Curriculum end points capture the knowledge, skills and understanding that children should have at the end of each year. They build progressively over time so that children leave Year 6 well-prepared for the next stage of education as competent and capable designers.
For subject leaders, they provide a clear overview of the end of year expectations for each year group, which will support the planning and assessment of the curriculum.
For teachers, they provide further clarity around what children should be able to do at the end of each year, using the knowledge they have gained from being taught the KKPDs. They support teachers to plan activities that help to develop children as effective designers. They should be used to check what children know and how well they can apply this knowledge across the curriculum.
For children, they ensure that they receive an equitable curriculum which gives them the substantive, procedural and disciplinary knowledge needed to be successful in their future studies.

Curriculum end points	**Children should be able to:**	**Children should be able to:**	**Children should be able to:**	**Children should be able to:**	**Children should be able to:**	**Children should be able to:**	**Children should be able to:**	**Children should be able to:**	**Children should be able to:**
	Recall the knowledge specified within the KKPDs for Nursery Talk about what they are going to make and how. Use simple tools safely (including knives and forks) Reflect on what they like about their creation. Identify healthy and unhealthy foods and which foods they like or dislike. .	Recall the knowledge specified within the KKPDs for Reception Know what a product is, discuss what they want to create and use drawings to represent their design choices. Discuss problems with their product and how they are going to solve them. Choose resources and materials suitable for the creation of their product. Understand how to join materials. Explain the importance of making healthy food choices and following simple hygiene rules.	Recall the knowledge specified within the KKPDs for Year 1 Draw a plan of what they want to create, using templates and describe how they want their product to work. Use their own plans to create a product, informed by exploring a range of existing products and observing what works well. Choose tools and resources for a specific purpose (such as tools for cutting, joining, etc.) and use them safely. Explain what went well after making their product, against a set criteria. Understand where fruit and vegetables come from, which are healthy and	Recall the knowledge specified within the KKPDs for Year 2 Identify the purpose and audience for their product, through unpicking the design criteria. Research and communicate ideas using IT. Draw simple designs with annotations alongside mock ups to explain why they have made design choices. Identify a range of hand tools and select whether they are appropriate for the creation of the product, explaining their reasoning. Evaluate a range of existing products, observing what works well to inform their own design choices.	Recall the knowledge specified within the KKPDs for Year 3 Annotate designs with their own design choices (materials, tools) considering the audience and purpose. Use knowledge of the purpose and audience for their product to choose the most suitable tools, materials and mechanisms, justifying their choices. Identify what makes a product successful or not, including their own. Make improvements to designs and products based on evaluative feedback against the design criteria.	Recall the knowledge specified within the KKPDs for Year 4 Explore a range of existing products and identify what makes products successful. Create designs from different viewpoints. Considering the influence of existing designs/designers Know a range of tools, their uses and when best to use them. Mark, measure, cut and join accurately. Use sewing, weaving or knitting skills. Evaluate their own and others' products and consider possible improvements.	Recall the knowledge specified within the KKPDs for Year 5 Understand and explain the benefit of CAD. Create 3D designs and CAD which are annotated with materials and tools. Know, select and use a range of tools independently, being able to justify their choices. Create prototypes of their product before making a final version. Investigate and research existing products using IT. Understand how significant events and people have led to change and innovation.	Recall the knowledge specified within the KKPDs for Year 6 Create detailed designs in a range of formats, displaying an awareness of culture and society. Justify design choices with references to audience and purpose. Select and use tools correctly and safely, selecting different tools for different purposes and being able to justify their choice. Pin, sew and stitch materials together. Make links between key events and individuals, being able to explain and reflect on how they have shaped existing products.	Recall the knowledge specified within the KKPDs for Year 7 Create their designs against a specific design specification for a specific audience. Understand how to make their product in a sustainable way. Make design choices with an awareness of the world around them. Create detailed step-by-step plans including specific technical vocabulary and detailed sketches Create prototypes of products beforehand. Have an awareness of how to be safe in the classroom.

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			which are not and how to use basic food handling and hygiene.	Use simple mechanisms (sliders, levers, wheels, axels) in their product. Understand where a variety of foods come from, have a good understanding of foods which support good health (including the risks of eating too much sugar)	Explain when it is best to use a gear, pulley or linkage in a design/product. Understand when food is ready to harvest and what a balanced diet consists of.	Understand that animals are caught or reared for food. Apply knowledge of electrical systems to their own product and why these are needed.	Evaluate the appearance and function of their own product, based on the design criteria. Reflect on and make amendments based on feedback from others. Use technology to improve the performance of a product Understand how and where foods are processed and how to prepare them safely and hygienically.	Evaluate their own products and others, against a design criterion. Test their product with a target audience and take feedback on success and/or improvements. Select the most appropriate way to improve their product by strengthening, stiffening and reinforcing. Understand where food ingredients should be stored and if a dish is sweet or savoury.	Have an awareness of the differences between working in a classroom and a workshop. Know how to mark and cut materials. Know how to use a range of stitches (temporary or permanent) by machine or by hand. Analyse the work of past and present professionals in the fields to develop an understanding. Justify how they have met the design criteria by evaluating their own and others work, giving feedback based on the design criteria. Identify the drawbacks of the product and suggest improvements for all aspects of the process. Know how electrical systems can be powered and know how they can be used in products.