

Design and Technology

NC Aims: The national curriculum for design and technology aims to ensure that all pupils: ♣ 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.

Year	Topic/Term	Key skills progression					National Curriculum coverage	Focus study	Use Projects on a Page	Key vocabulary	Key questions	Previous skills / coverage links	Future skills / coverage links
		Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition							
EYFS	EYFS	<p>*Select appropriate resources *Use gestures, talking and arrangements of materials and components to show design * Use contexts set by the teacher and myself *Use language of designing and making (join, build, shape, longer, shorter, heavier etc.)</p>	<p>*Construct with a purpose, using a variety of resources *Use simple tools and techniques *Build / construct with a wide range of objects *Select tools & techniques to shape, assemble and join *Replicate structures with materials / components *Discuss how to make an activity safe and hygienic *Record experiences by drawing, writing, voice recording *Understand different media can be combined for a purpose</p>	<p>*Adapt work if necessary *Dismantle, examine, talk about existing objects/structures *Consider and manage some risks *Practise some appropriate safety measures independently *Talk about how things work *Look at similarities and differences between existing objects / materials / tools *Show an interest in technological toys *Describe textures</p>		<p>*Begin to understand some food preparation tools, techniques and processes *Practise stirring, mixing, pouring, blending *Discuss how to make an activity safe and hygienic *Discuss use of senses *Understand need for variety in food *Begin to understand that eating well contributes to good health</p>	<p>Use a range of small tools, including scissors, paint brushes and cutlery; Creating with Materials ELG Children at the expected level of development will: - 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</p>	<p>Simple Flap Bench fold</p> <p>Wheels Investigate fixed axles and rotating wheels on toy cars</p> <p>Use construction materials/ loose parts to explore free standing structures and bridges.</p> <p>Different methods of joining paper and card.</p>	<p>Design and Develop Plan</p> <ul style="list-style-type: none"> • Draw • Ideas • Design <p>Making</p> <ul style="list-style-type: none"> • Make • Build • Combine • Join • Shape • Tools <p>Product Complete</p> <ul style="list-style-type: none"> • Product • Final <p>Evaluation</p> <ul style="list-style-type: none"> • Change • Like • Dislike • Next time • Better • Worse • Different • Instead 	<p>What would you change about your design?</p> <ul style="list-style-type: none"> • How could you make your design faster/stronger etc? 			

							and stories.						
KS1	<p>Year 1</p> <p>Autumn cycle A Castle Adventures</p> <p>cycle B London Adventures</p> <p>Spring cycle A Exciting Journeys</p> <p>cycle B Exciting Animals</p> <p>Summer cycle A I Need a Hero!</p> <p>cycle B Spectacular Seashore</p>	<p>* have own ideas * explain what I want to do *explain what my product is for, and how it will work * use pictures and words to plan, begin to use models * design a product for myself following design criteria *research similar existing products</p>	<p>*explain what I'm making and why plan by suggesting what to do next</p> <p>*consider what I need to do next *select tools/equipment to cut, shape, join, finish and explain choices</p> <p>*measure, mark out, cut and shape, with support *choose suitable materials and explain choices *try to use finishing techniques to make product look good *work in a safe and hygienic manner</p>	<p>*talk about my work, linking it to what I was asked to do</p> <p>* talk about existing products considering: use, materials, how they work, audience, where they might be used *talk about existing products, and say what is and isn't good</p> <p>* talk about things that other people have made *begin to talk about how their products could be improved.</p>	<p>Materials / structures</p> <p>*begin to measure and join materials, with some support</p> <p>*describe differences in materials *suggest ways to make material/product stronger</p> <p>• that a 3-D textiles product can be assembled from two identical fabric shapes</p> <p>• the correct technical vocabulary for the projects they are undertaking</p> <p>Mechanisms</p> <p>Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p> <p>Textiles</p> <p>*measure, cut and join textiles to make a product, with some support *choose suitable textiles</p>	<p>. *describe textures</p> <p>*wash hands & clean surfaces</p> <p>*think of interesting ways to decorate food *say where some foods come from, (i.e. plant or animal) *describe differences between some food groups (i.e. sweet, vegetable etc.)</p> <p>*discuss how fruit and vegetables are healthy</p> <p>*cut, peel and grate safely, with support</p> <p>• that food ingredients should be combined according to their sensory characteristics</p>	<p>Design ♣ design purposeful, functional, appealing products for themselves and other users based on design criteria ♣ generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p> <p>Make ♣ select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] ♣ select from and use a wide range of materials and components, including construction materials,</p>	<p>Mechanisms Sliders and Levers</p> <p>See Projects on a page Mechanisms: sliders and levers</p> <p>Children to make a Christmas Card</p> <p>Mechanisms Wheels and Axles</p> <p>See Projects on a page</p> <p>Children to make a London bus using peg axel</p> <p>Structures Freestanding structures</p> <p>See Projects on a page</p> <p>Children to make a chair for baby bear</p> <p>Can use construction toys to aid product development.</p> <p>Textiles Templates and joining</p> <p>See Projects on a page</p> <p>Children to make a lunchbox carrier for the lighthouse keeper</p> <p>Focus on best material to use and joining without sewing.</p> <p>Food: Preparing fruit and vegetables</p> <p>See Projects on a page</p> <p>Children to make a healthy pudding for the lighthouse keeper</p>	<p>What could children design, make and evaluate?</p> <p>Greetings card (with moving parts)</p> <p>Intended users? themselves</p> <p>Purpose of product? Celebration Christmas card</p> <p>Project Title Design, make and evaluate a Christmas card for themselves for celebration.</p> <p>What could children design, make and evaluate?</p> <p>Push and pull toys/ vehicles</p> <p>Intended users? People who help us</p> <p>Purpose of product? Celebration Christmas card</p> <p>Project Title Design, make and evaluate a Christmas card for themselves for celebration</p> <p>What could children design, make and evaluate?</p> <p>Chairs</p> <p>Intended users? Baby bear</p> <p>Purpose of product? rest</p> <p>Project Title Design, make and evaluate chairs for baby bear for rest.</p> <p>What could children design, make and evaluate?</p> <p>Bags/baskets</p> <p>Intended users? Lighthouse keeper</p> <p>Purpose of product? Carrying items</p> <p>Project Title Design, make and evaluate</p>	<p>Make Plan</p> <ul style="list-style-type: none"> • Prepare • Design • Materials • Ideas • Use • Model • Development • Market Research • Survey • Template <p>Technical knowledge</p> <ul style="list-style-type: none"> • Fast • Slow • Faster • Slower • Up • Down • Turn • Wind up • Design • Draw • Sketch • Tools • Fix • Glue • Attach • Features • Brick • Wood • Stone • Cloth • Metal • Foam • Felt • Paper • Tissue • Newspaper • Cardboard • String • Wool • Clay • Scissors • Glue • Tape • Cut • Stick • Decorate <p>Cooking and Nutrition</p> <ul style="list-style-type: none"> • Healthy • Unhealthy • Source • Fruit • Vegetables • Clean • Safe • Dirty • Unsafe • Amount • Ingredients 	<p>What would you change about your design?</p> <ul style="list-style-type: none"> • How could you make your design faster/stronger etc? • What do you like about someone else's design? • What would happen if you changed....? 	EYFS links	

						<p>textiles and ingredients, according to their characteristics</p> <p>Evaluate ♣ explore and evaluate a range of existing products ♣ evaluate their ideas and products against design criteria</p>	<p>Focus peeling and slicing</p>	<p>bags for lighthouse keeper for carrying.</p> <p>What could children design, make and evaluate? Fruit salads Intended users? Lighthouse keeper Purpose of product? pudding Project Title Design, make and evaluate fruit salad for a lighthouse keeper for pudding.</p>	<p>Recipe • Weight • Nutrients • Vegetarian • Dietary requirements</p> <p>Evaluate • Change • Improve • Prefer • Useful • Unsuccessful • Future • Progress • modify • Alter • Adapt • Original • Finished article •</p>					
Key learning points														
<p>Year 2</p> <p>Autumn cycle A Castle Adventures</p> <p>cycle B London Adventures</p> <p>Spring cycle A Exciting Journeys</p> <p>cycle B Exciting Animals</p> <p>Summer cycle A I Need a Hero!</p> <p>cycle B Spectacular Seashore</p>	<p>* have own ideas and plan what to do next * explain what I want to do and describe how I may do it * explain purpose of product, how it will work and how it will be suitable for the user * describe design using pictures, words, models, diagrams, begin to use ICT * design products for myself and others following design criteria * choose best tools and materials, and explain choices * use knowledge of existing products to produce ideas</p>	<p>*explain what I am making and why it fits the purpose plan by suggesting what to do next *make suggestions as to what I need to do next. *join materials/components together in different ways *measure, mark out, cut and shape materials and components, with support. *describe which tools I'm using and explain choices *choose suitable materials and explain choices depending on characteristics. *use finishing techniques to make product look good *work safely and hygienically</p>	<p>* describe what went well, thinking about design criteria * talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion *evaluate how good existing products are *talk about what I would do differently if I were to do it again and why</p>	<p>Materials/structures measure materials *describe some different characteristics of materials *join materials in different ways *use joining, rolling or folding to make it stronger *use own ideas to try to make product stronger Mechanisms *use levers or slides *begin to understand how to use wheels and axles</p> <p>Textiles *measure textiles *join textiles together to make a product, and explain how I did it *carefully cut textiles to produce accurate pieces *explain choices of textile • that a 3-D textiles product can be assembled from two identical fabric shapes • the correct technical</p>	<p>*explain hygiene and keep a hygienic kitchen *describe properties of ingredients and importance of varied diet *say where food comes from (animal, underground etc.) *describe how food is farmed, home-grown, caught *draw eat well plate; explain there are groups of food *describe "five a day" *cut, peel and grate with increasing confidence</p> <p>• that food ingredients should be combined according to their sensory characteristics</p>	<p>Technical knowledge ♣ build structures, exploring how they can be made stronger, stiffer and more stable ♣ explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p>	<p>Mechanisms: sliders and levers See Projects on a page</p> <p>Children to make a story book with a pivot front cover linked T4W</p> <p>Mechanisms Wheels and Axles See Projects on a page Moving toys Hamley's Challenge: Children to make a vehicle for a toy (builds on previous knowledge but with a more challenging design brief e.g. to carry the size and weight of a specific toy. Children chose which axel they think will be best suited e.g. peg, triangle card or straw.</p> <p>Structures Freestanding structures See Projects on a page.</p> <p>Children to make a freestanding draw bridge for a king</p> <p>Can use construction toys to aid product</p>	<p>What could children design, make and evaluate? Story Books Intended users? Younger children Purpose of product? pleasure Project Title Design, make and evaluate a story book for Class R children for pleasure.</p> <p>What could children design, make and evaluate? Vehicles that carry different sized/weights of toys. Intended users? Teddy/doll Purpose of product? Moving objects Project Title Design, make and evaluate vehicles for toys to be transported in.</p>	<p>Evaluate • Graphics</p>	<p>What would you change about your design? • How could you make your design faster/stronger etc? • What do you like about someone else's design? • What would happen if you changed....?</p>				

				vocabulary for the projects they are undertaking			development.	<p>Textiles: Templates and joining See Projects on a page Children to make a puppet</p> <p>Focus on sewing a running stitch</p> <p>Food: Preparing fruit and vegetables See Projects on a page</p> <p>Children to make a fruit jelly for the children Children design a fruit jelly choosing flavours</p> <p>Focus peeling, slicing and grating. Can be practised on carrots.</p> <p>What could children design, make and evaluate? Freestanding structures (playground equipment) Intended users? king Purpose of product? defence Project Title Design, make and evaluate freestanding structures, a drawbridge for a king for defence.</p> <p>What could children design, make and evaluate? puppets Intended users? child Purpose of product? play Project Title Design, make and evaluate puppets for a child for play.</p> <p>What could children design, make and evaluate? Fruit jelly Intended users? Class Purpose of product? Best flavour Project Title Design, make and evaluate fruit jelly for the class to find the most popular flavour.</p>				
Key learning points												
<p>Year 3</p> <p>Autumn cycle A Yabba Dabba Do!</p> <p>cycle B Made in Shropshire</p> <p>Spring cycle A Invasion</p>	<p>*begin to research others' needs * show design meets a range of requirements * describe purpose of product * follow a given design criteria * have at least one idea about how to create product * create a plan which shows order, equipment and tools *describe design using an accurately labelled sketch and</p>	<p>select suitable tools/equipment, explain choices; begin to use them accurately * select appropriate materials, fit for purpose. * work through plan in order *consider how good product will be * begin to measure, mark out, cut and shape materials/components with some accuracy</p>	<p>* look at design criteria while designing and making *use design criteria to evaluate finished product * say what I would change to make design better *begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose</p>	<p>Materials/structures *use appropriate materials *that materials can be combined and mixed to create more useful characteristics *work accurately to make cuts and holes * join materials *begin to make strong structures</p> <p>Mechanisms *select appropriate tools / techniques *alter product after checking, to make it</p>	<p>*carefully select ingredients *use equipment safely *make product look attractive *think about how to grow plants to use in cooking *begin to understand food comes from UK and wider world *describe how healthy diet= variety/balance of food/drinks *explain how food and drink</p>		<p>Mechanisms Levers and Linkages See Projects on a page</p> <p>Children to make a Christmas card using a fixed and loose pivot.</p> <p>Structures</p>	<p>What could children design, make and evaluate? Greetings card (with moving parts) Intended users? themselves Purpose of product? Celebration Christmas card Project Title Design, make and evaluate a Christmas card for themselves for celebration.</p> <p>What could children design, make and</p>	<p>What could you do to make your design better?</p> <ul style="list-style-type: none"> • Find one thing that is better about someone else's design. • How would you help someone who wanted to make their own...? • What is the best/worst thing about 			

	<p>Force cycle B</p> <p>Glorious Greeks</p> <p>Summer cycle A</p> <p>Europe cycle B</p> <p>Mighty Mountains</p>	<p>words</p> <p>* make design decisions *explain how product will work</p> <p>* make a prototype</p> <p>* begin to use computers to show design</p> <p>develop a simple design specification to guide their thinking</p>	<p>* begin to assemble, join and combine materials and components with some accuracy</p> <p>* begin to apply a range of finishing techniques with some accuracy</p> <p>*explain their choice of tools and equipment in relation to the skills and techniques they will be using</p> <p>* order the main stages of making</p>	<p>* begin to understand by whom, when and where products were designed</p> <p>* learn about some inventors/designers/engineers/chefs/manufacturers of ground breaking products</p> <p>*evaluate their ideas and products against their original design specification</p>	<p>better</p> <p>*begin to try new/different ideas</p> <p>*use simple lever and linkages to create movement</p> <p>Textiles</p> <p>*join different textiles in different ways</p> <p>*choose textiles considering appearance and functionality</p> <p>*begin to understand that a simple fabric shape can be used to make a 3D textiles project</p> <p>put • that a single fabric shape can be used to make a 3D textiles product</p> <p>Electric systems</p> <p>*use simple circuit in product</p> <p>*learn about how to program a computer to control product.</p> <p>*the correct technical vocabulary for the projects they are undertaking</p>	<p>are needed for active/healthy bodies.</p> <p>*prepare and cook some dishes safely and hygienically</p> <p>*grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</p> <p>• that food ingredients can be fresh, pre-cooked and processed</p>		<p>Shell Structures</p> <p>See Projects on a page</p> <p>Children to make a mountain using a square based pyramid net</p> <p>Clix could be used to aid understanding of shell structures.</p> <p>Textiles</p> <p>2D shape to 3D product</p> <p>See Projects on a page</p> <p>Children to make a purse/wallet.</p> <p>Focus on sewing a over stitching or blanket stitch also look at fastenings such as press studs or buttons.</p> <p>Food: Healthy and Varied Diet</p> <p>See Projects on a page</p> <p>Children to make a lunch option for themselves</p> <p>Children design a sandwich/wrap/toastie or pitta pocket choosing flavours that will require the skills of grating, spreading and cutting</p>	<p>evaluate?</p> <p>Shell structures</p> <p>Intended users?</p> <p>parents</p> <p>Purpose of product?</p> <p>display</p> <p>Project Title</p> <p>Design, make and evaluate a shell structure mountain for parents for display and to share knowledge of mountains.</p> <p>What could children design, make and evaluate?</p> <p>Purses and wallets</p> <p>Intended users?</p> <p>themselves</p> <p>Purpose of product?</p> <p>storage</p> <p>Project Title</p> <p>Design, make and evaluate purses and wallets for themselves for storage.</p> <p>What could children design, make and evaluate?</p> <p>smoothies</p> <p>Intended users? Class</p> <p>Purpose of product?</p> <p>smoothies</p> <p>Project Title</p> <p>Design, make and evaluate lunch option for the class to find the most healthy.</p>		your design?				
	Key learning points														
		Key skills progression													
Year	Topic/Term	Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition	National Curriculum coverage	Focus study		Key vocabulary	Key questions	Previous skills / coverage links	Future skills / coverage links		
LKS2	Year 4 Autumn cycle A	* use research for design ideas * show design meets a range of requirements and is fit for purpose *begin to create own	* select suitable tools and equipment, explain choices in relation to required techniques and use accurately *select appropriate	*refer to design criteria while designing and making *use criteria to evaluate product * begin to explain how I could improve original design *evaluate existing products, considering: how well they've	Materials/structures *measure carefully to avoid mistakes *attempt to make product strong *continue working on product even if	*explain how to be safe/hygienic *think about presenting product in interesting/	Design Use research and develop criteria to inform the design of	Mechanisms Pneumatics See Projects on a page Mechanisms: Pneumatics Children to make a character with moving	What could children design, make and evaluate? Hydraulics such as tipper trucks and farm machinery. Intended users?	Design • Plan • Organise • Prototype • Initial ideas • Criteria • Diagrams •	• Explain what you could change and how it would improve your design?				

<p>Yabba Dabba Do!</p> <p>cycle B</p> <p>Made in Shropshire</p> <p>Spring cycle A</p> <p>Invasion Force</p> <p>cycle B</p> <p>Glorious Greeks</p> <p>Summer cycle A</p> <p>Europe</p> <p>cycle B</p> <p>Mighty Mountains</p>	<p>design criteria</p> <p>*have at least one idea about how to create product and suggest improvements for design.</p> <p>* produce a plan and explain it to others</p> <p>*say how realistic plan is.</p> <p>*include an annotated sketch</p> <p>*make and explain design decisions considering availability of resources</p> <p>*explain how product will work</p> <p>* make a prototype</p> <p>*begin to use computers to show design.</p> <p>*develop a simple design specification to guide their thinking</p>	<p>materials, fit for purpose; explain choices</p> <p>* work through plan in order.</p> <p>* realise if product is going to be good quality</p> <p>* measure, mark out, cut and shape materials/components with some accuracy</p> <p>*assemble, join and combine materials and components with some accuracy</p> <p>*apply a range of finishing techniques with some accuracy</p> <p>*explain their choice of tools and equipment in relation to the skills and techniques they will be using</p> <p>* order the main stages of making</p>	<p>been made, materials, whether they work, how they have been made, fit for purpose</p> <p>* discuss by whom, when and where products were designed</p> <p>* research whether products can be recycled or reused</p> <p>* know about some inventors/designers/engineers/chefs/manufacturers of ground-breaking products</p> <p>*evaluate their ideas and products against their original design specification</p>	<p>original didn't work</p> <p>*make a strong, stiff structure</p> <p>*that materials can be combined and mixed to create more useful characteristics</p> <p>Mechanism</p> <p>*select most appropriate tools / techniques</p> <p>*explain alterations to product after checking it</p> <p>*grow in confidence about trying new / different ideas.</p> <p>*use levers and linkages to create movement</p> <p>*use pneumatics to create movement</p> <p>Textiles</p> <p>*think about user when choosing textiles</p> <p>*think about how to make product strong</p> <p>* begin to devise a template</p> <p>*explain how to join things in a different way</p> <p>*understand that a simple fabric shape can be used to make a 3D textiles project</p> <p>that a single fabric shape can be used to make a 3D textiles product</p> <p>Electric systems</p> <p>*use number of components in circuit</p> <p>*program a computer to control product</p> <p>*the correct technical vocabulary for the projects they are undertaking</p>	<p>attractive ways</p> <p>*understand ingredients can be fresh, pre-cooked or processed</p> <p>*begin to understand about food being grown, reared or caught in the UK or wider world</p> <p>*describe eat well plate and how a healthy diet=variety / balance of food and drinks</p> <p>*explain importance of food and drink for active, healthy bodies</p> <p>*prepare and cook some dishes safely and hygienically</p> <p>*use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</p> <p>* that food ingredients can be fresh, pre-cooked and processed</p>	<p>innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups</p> <ul style="list-style-type: none"> • Generate, develop, model and communicate ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>Make</p> <p>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <ul style="list-style-type: none"> • Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their 	<p>parts (linked to T4W) using a squeeze bottle and a balloon. Some children may choose to use three syringes connected to a t bar.</p> <p>Structures</p> <p>Shell Structures using CAD</p> <p>See Projects on a page</p> <p>Children to make a pyramid</p> <p>Clixi could be used to aid understanding of shell structures.</p> <p>Food: Healthy and Varied Diet</p> <p>See Projects on a page</p> <p>Children to make a lunch option for themselves</p> <p>Children design a sandwich/wrap/toastie or pitta pocket choosing flavours that will require the skills of grating, spreading and cutting</p> <p>Electrical Systems: Simple programming and control</p> <p>See Projects on a page</p> <p>Children to make a working light for class display</p> <p>This display could be linked for TFW unit. The final product will be a class display not to be taken home (due to the use of Crumbles)</p>	<p>themselves</p> <p>Purpose of product? entertainment</p> <p>Project Title</p> <p>Design, make and evaluate a moving character for themselves for entertainment.</p> <p>What could children design, make and evaluate?</p> <p>Shell structures</p> <p>pyramid</p> <p>Intended users? themselves</p> <p>Purpose of product? storage</p> <p>Project Title</p> <p>Design, make and evaluate a shell structure money boxes for themselves for storing money..</p> <p>What could children design, make and evaluate?</p> <p>Lunch option</p> <p>Intended users? Class</p> <p>Purpose of product? Healthy lunch</p> <p>Project Title</p> <p>Design, make and evaluate lunch option for the class to find the most healthy.</p> <p>What could children design, make and evaluate?</p> <p>lighting</p> <p>Intended users? Class</p> <p>Purpose of product? Display</p> <p>Project Title</p> <p>Design, make and evaluate lighting for the class for display.</p>	<p>Labels</p> <ul style="list-style-type: none"> • Annotate • Brief • Product • Consumer • Customer • Target audience • Purpose • Application • Constraints • Client <p>Technical Knowledge & Making</p> <ul style="list-style-type: none"> • Fast • Slow • Faster • Slower • Up • Down • Turn • Wind up • Design • Draw • Sketch • Tools • Fix • Glue • Attach • Features • Brick • Wood • Stone • Cloth • Metal • Foam • Felt • Paper • Tissue • Newspaper • Cardboard • String • Wool • Clay • Scissors • Glue • Tape • Cut • Stick • Decorate <p>Cooking and Nutrition</p> <ul style="list-style-type: none"> • Healthy • Unhealthy • Source • Fruit • Vegetables • Clean • Safe • Dirty • Unsafe • Amount • Ingredients • Recipe • Weight 	<ul style="list-style-type: none"> • How would you change your design for the 'real world'? • How effective at.... Is your...? 		
<p>Year</p>	<p>*use internet and questionnaires for research and design</p>	<p>* use selected tools/equipment with good level of precision</p>	<p>*evaluate quality of design while designing and making</p> <p>*evaluate ideas and finished</p>	<p>Materials/structures</p> <p>*select materials carefully,</p>	<p>*explain how to be safe / hygienic and</p>		<p>Mechanisms</p> <p>Pulleys and Gears</p> <p>See Projects on a page</p>	<p>What could children design, make and evaluate?</p>	<ul style="list-style-type: none"> • Nutrients • Vegetarian • Dietary 	<ul style="list-style-type: none"> • How could you make your design more 		

<p>5</p> <p>Autumn cycle A Yabba Dabba Do!</p> <p>cycle B Made in Shropshire</p> <p>Spring cycle A Invasion Force</p> <p>cycle B Glorious Greeks</p> <p>Summer cycle A Europe</p> <p>cycle B Mighty Mountains</p>	<p>ideas</p> <p>*take a user's view into account when designing</p> <p>* begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose</p> <p>*create own design criteria</p> <p>* have a range of ideas</p> <p>*produce a logical, realistic plan and explain it to others.</p> <p>*use cross-sectional planning and annotated sketches</p> <p>* make design decisions considering time and resources. *clearly explain how parts of product will work.</p> <p>*model and refine design ideas by making prototypes and using pattern pieces.</p> <p>*use computer-aided designs</p> <p>*develop a simple design specification to guide their thinking</p> <p>*make design decisions that take account of the availability of resources</p>	<p>* produce suitable lists of tools, equipment/materials needed *select appropriate materials, fit for purpose; explain choices, considering functionality * create and follow detailed step-by-step plan * explain how product will appeal to an audience</p> <p>* mainly accurately measure, mark out, cut and shape materials/components</p> <p>*mainly accurately assemble, join and combine materials/components</p> <p>* mainly accurately apply a range of finishing techniques</p> <p>* use techniques that involve a small number of steps</p> <p>* begin to be resourceful with practical problems</p> <p>*explain their choice of tools and equipment in relation to the skills and techniques they will be using</p> <p>* order the main stages of making</p> <ul style="list-style-type: none"> • produce appropriate lists of tools, equipment and materials that they need • formulate step-by-step plans as a guide to making <p>*use techniques that involve a number of steps</p>	<p>product against specification, considering purpose and appearance. *test and evaluate final product * evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * begin to evaluate how much products cost to make and how innovative they are</p> <p>*research how sustainable materials are</p> <p>*talk about some key inventors/designers/engineers/chefs/manufacturers of groundbreaking products</p> <p>*evaluate their ideas and products against their original design specification</p>	<p>considering intended use of product and appearance</p> <p>*that materials can be combined and mixed to create more useful characteristics</p> <p>*explain how product meets design criteria</p> <p>*measure accurately enough to ensure precision</p> <p>*ensure product is strong and fit for purpose</p> <p>*begin to reinforce and strengthen a 3D frame</p> <p>Mechanism</p> <p>*refine product after testing</p> <p>*grow in confidence about trying new / different ideas</p> <p>*begin to use cams, pulleys or gears to create movement</p> <p>Textiles</p> <p>*think about user and aesthetics when choosing textiles</p> <p>*use own template</p> <p>* think about how to make product strong and look better</p> <p>*think of a range of ways to join things</p> <p>*begin to understand that a single 3D textiles project can be made from a combination of fabric shapes.</p> <p>Electric systems</p> <p>*incorporate switch into product</p> <p>*confidently use number of components in circuit</p> <p>*begin to be able to program a computer to monitor changes in environment and control product</p> <p>*the correct</p>	<p>follow own guidelines</p> <p>*present product well - interesting, attractive, fit for purpose</p> <p>*begin to understand seasonality of foods</p> <p>*understand food can be grown, reared or caught in the UK and the wider world</p> <p>*describe how recipes can be adapted to change appearance, taste, texture, aroma</p> <p>*explain how there are different substances in food / drink needed for health</p> <p>*prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source</p> <p>* use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>• that a recipe can be adapted by adding or substituting one or more ingredients</p> <p>*that recipes</p>	<p>functional properties and aesthetic qualities.</p> <p>Evaluate investigate and analyse a range of existing products</p> <ul style="list-style-type: none"> • Evaluate ideas and products against their own design criteria and consider the views of others to improve their work • Understand how key events and individuals have helped shape the world <p>Technical</p> <p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <ul style="list-style-type: none"> • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Understand and use 	<p>Children to make a controllable toy vehicle</p> <p>Structures</p> <p>Frame Structures</p> <p>See Projects on a page</p> <p>Children to make camouflaged moon buggy shell using triangulation.</p> <p>Could use rolled paper, straws, lolly sticks or wood</p> <p>Food: Celebrating Culture and Seasonality</p> <p>See Projects on a page</p> <p>Children to a celebration snack for themselves</p> <p>Children design a celebration snack</p> <p>Revisit cutting, grating and slicing and look at the techniques of mixing, rubbing and kneading.</p> <p>Textiles</p> <p>Combing Different Fabric Shapes</p> <p>See Projects on a page</p> <p>Children to make a phone case and choose appropriate fastening.</p> <p>Focus on joining fabrics and adding stitches to finished design.</p>	<p>Moon Buggy</p> <p>Intended users? Younger children</p> <p>Purpose of product? entertainment</p> <p>Project Title Design, make and evaluate a controllable vehicle for younger children for entertainment.</p> <p>What could children design, make and evaluate? Frame structure</p> <p>Intended users? Toy figure</p> <p>Purpose of product? Transport</p> <p>Project Title Design, make and evaluate a camouflaged shelter box for soldiers for defence.</p> <p>What could children design, make and evaluate? Celebration snack</p> <p>Class</p> <p>Purpose of product? Seasonal snack</p> <p>Project Title Design, make and evaluate celebration snack for the class for seasonality.</p> <p>What could children design, make and evaluate? Phone cases</p> <p>Intended users? parents</p> <p>Purpose of product? Storage and gift</p> <p>Project Title Design, make and evaluate a phone case for parents for storage.</p>	<p>requirements</p> <p>Evaluate</p> <ul style="list-style-type: none"> • Change • Improve • Prefer • Useful • Unsuccessful • Future • Progress • modify • Alter • Adapt • Original • Finished article • Evaluate • Graphics 	<p>suited to mass production?</p> <ul style="list-style-type: none"> • What developments would need to be made for your design to....? • What tests would you need to do to...? 	
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					technical vocabulary for the projects they are undertaking	can be adapted to change the appearance, taste, texture and aroma	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 products.						
Year 6	<p>* draw on market research to inform design</p> <p>* use research of user's individual needs, wants, requirements for design</p> <p>* identify features of design that will appeal to the intended user</p> <p>* create own design criteria and specification</p> <p>* come up with innovative design ideas</p> <p>* follow and refine a logical plan.</p> <p>* use annotated sketches, cross-sectional planning and exploded diagrams</p> <p>* make design decisions, considering resources and cost</p> <p>* clearly explain how parts of design will work, and how they are fit for purpose</p> <p>* independently model and refine design ideas by making prototypes</p>	<p>* use selected tools and equipment precisely</p> <p>* produce suitable lists of tools, equipment, materials needed, considering constraints</p> <p>* select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics</p> <p>* create, follow, and adapt detailed step-by-step plans</p> <p>* explain how product will appeal to audience; make changes to improve quality</p> <p>* accurately measure, mark out, cut and shape materials/components</p> <p>* accurately assemble, join and combine materials/components</p> <p>* accurately apply a range of finishing techniques</p> <p>* use techniques that involve a number of steps</p> <p>* be resourceful with practical problems</p>	<p>* evaluate quality of design while designing and making; is it fit for purpose? * keep checking design is best it can be.</p> <p>* evaluate ideas and finished product against specification, stating if it's fit for purpose</p> <p>* test and evaluate final product; explain what would improve it and the effect</p> <p>* different resources may have had</p> <p>* do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose</p> <p>* evaluate how much products cost to make and how innovative they are</p> <p>* research and discuss how sustainable materials are</p> <p>* consider the impact of products beyond their intended purpose</p> <p>* discuss some key inventors/designers/engineers/chefs/manufacturers of groundbreaking products</p> <p>* evaluate their ideas and products against their original design specification</p>	<p>Materials/structures</p> <p>* select materials carefully, considering intended use of the product, the aesthetics and functionality.</p> <p>* explain how product meets design criteria</p> <p>* reinforce and strengthen a 3D frame</p> <p>Mechanism</p> <p>* refine product after testing, considering aesthetics, functionality and purpose</p> <p>* incorporate hydraulics and pneumatics</p> <p>* be confident to try new / different ideas</p> <p>* use cams, pulleys and gears to create movement</p> <p>Textiles</p> <p>think about user's wants/needs and aesthetics when choosing textiles</p> <p>* make product attractive and strong</p> <p>* make a prototype</p> <p>* use a range of joining techniques</p>	<p>* understand a recipe can be adapted by adding / substituting ingredients</p> <p>* explain seasonality of foods</p> <p>* learn about food processing methods</p> <p>* name some types of food that are grown, reared or caught in the UK or wider world</p> <p>* adapt recipes to change appearance, taste, texture or aroma.</p> <p>* describe some of the different substances in food and drink, and how they can affect health</p> <p>* prepare and cook a variety of savoury dishes safely and</p>	<p>* Understand and apply the principles of a healthy and varied diet</p>	<p>A two term project to make a moving vehicle using a frame structure (term 1) and a mechanism (term 2)</p> <p>Structures</p> <p>Frame Structures using CAD</p> <p>See Projects on a page</p> <p>Children to make a toy vehicle body frame Using Tinkercard</p> <p>Mechanisms</p> <p>Pulleys and Gears</p> <p>See Projects on a page</p> <p>Children to make a controllable toy vehicle</p>	<p>What could children design, make and evaluate?</p> <p>Toy vehicle body frame</p> <p>Intended users?</p> <p>younger children</p> <p>Purpose of product?</p> <p>Supporting mechanism</p> <p>Project Title</p> <p>Design, make and evaluate a toy vehicle body frame for younger children for supporting mechanism.</p> <p>What could children design, make and evaluate?</p> <p>Controllable toys</p> <p>Intended users?</p> <p>Younger children</p> <p>Purpose of product?</p> <p>entertainment</p> <p>Project Title</p> <p>Design, make and evaluate a controllable vehicle for younger children for entertainment.</p>	<p>• What would you need to change to be able to sell your design? • How could you adapt... to make...? • What do you predict would happen if...? • Judge whether.... would cause/change/affect....</p>				

and using pattern pieces
* use computer-aided designs
*develop a simple design specification to guide their thinking
*make design decisions that take account of the availability of resources

*explain their choice of tools and equipment in relation to the skills and techniques they will be using
* order the main stages of making
• produce appropriate lists of tools, equipment and materials that they need
• formulate step-by-step plans as a guide to making
*use techniques that involve a number of steps

*think about how product might be sold
*think carefully about what would improve product
*understand that a single 3D textiles project can be made from a combination of fabric shapes that a 3D textiles product can be made from a combination of fabric shapes

Electric systems
*use different types of circuit in product
* think of ways in which adding a circuit would improve product
* program a computer to monitor changes in environment and control product

*the correct technical vocabulary for the projects they are undertaking

hygienically including, where appropriate, the use of heat source. *use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.

• that a recipe can be adapted by adding or substituting one or more ingredients

*that recipes can be adapted to change the appearance, taste, texture and aroma

Mechanisms
Cams
See Projects on a page
Children to make a toy with moving parts

Electrical Systems: Monitoring and Control
See Projects on a page

Children to make an electronic token moneybox using a Crumble.

This could be made as a method of collecting house point tokens.

Electrical Systems: More complex systems and switches
See Projects on a page

Children to make an automatic nightlight using a push to break switch.

What could children design, make and evaluate?
Toys with moving parts
Intended users? Visitors to school
Purpose of product? Display
Project Title
Design, make and evaluate a moving story box for visitors for display.

What could children design, make and evaluate?
Electronic toys
Intended users? Class
Purpose of product? Electronic collection
Project Title
Design, make and evaluate electronic token moneybox for the class for token collection.

What could children design, make and evaluate?
Nightlights
Intended users? Small

									children Purpose of product? Project Title Design, make and evaluate an automatic nightlight for small children for lighting.			

National Curriculum 2014 – statements which are either derived directly from the programmes of study for D&T or provide an age-related interpretation of the requirements are shown in regular font

School Curriculum – statements which are additional to the programmes of study for D&T are shown in red font (elements considered by the Design and Technology Association to be fundamental to children’s learning in KS1 and 2

Focus study