

DESIGN AND TECHNOLOGY SKILLS

YEAR 1							
KS 1 National Curriculum Assessment criteria	skills						
	FOOD	MATERIALS	TEXTILES	ELECTRICALS & ELECTRONICS	MECHANISMS	STRUCTURES	
<p>Design</p> <p>☑ design purposeful, functional, appealing products for themselves and other users based on design criteria</p> <p>☑ generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p>	<p>I can choose appropriate ingredients</p> <p>I can design a food dish to meet criteria</p>	<p>I can choose materials that are most suitable</p> <p>I can design my idea using my chosen material</p>	<p>I can design my idea</p>		<p>I can say how a moving object works</p> <p>I can design my own object using mechanisms I have explored</p>	<p>I can design a structure</p>	
<p>Make</p> <p>☑ select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</p> <p>☑ select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</p>	<p>I can assemble/combine ingredients</p> <p>I can show that I have to wash my hands and keep work surfaces clean when preparing food</p> <p>I can cut, peel or grate ingredients safely</p>	<p>I can measure, mark out and cut fabric.</p> <p>I can join fabric using glue</p> <p>I can alter a textile to make it stronger</p>	<p>I can use shapes as a template for cutting my textile</p> <p>I can join textiles using running stitch</p>		<p>I can make a product that moves using a turning mechanism</p> <p>I can make a product that uses a lever or a hinge to create movement</p>	<p>I can make a structure that signifies my design</p> <p>I can fold, roll and join materials to make my structure</p> <p>I can measure and mark out the materials I need for my structure</p> <p>I complete my work to create a neat finish</p>	

DESIGN AND TECHNOLOGY SKILLS

<p>Evaluate</p> <ul style="list-style-type: none">☑ explore and evaluate a range of existing products☑ evaluate their ideas and products against design criteria	<p>I can talk about my own work I can say how I can improve my own work I can talk about the work of others I can make suggestions on how others can improve their work</p>
<p>Technical knowledge</p> <ul style="list-style-type: none">☑ 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>I can say how a product works I can use key vocabulary when explaining how a product works I can describe the properties of the materials I am using.</p>

DESIGN AND TECHNOLOGY SKILLS

YEAR 2							
KS 1 National Curriculum Assessment criteria	skills						
	FOOD	MATERIALS	TEXTILES	ELECTRICALS & ELECTRONICS	MECHANISMS	STRUCTURE	
<p>Design</p> <p>☑ design purposeful, functional, appealing products for themselves and other users based on design criteria</p> <p>☑ generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p>		I can select appropriate material so that it does the job I want it to			I can design a product that moves I can select appropriate material so that it does the job I want it to	I can design a structure that uses materials that are strong enough for the purpose.	
<p>Make</p> <p>☑ select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</p> <p>☑ select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</p>	<p>I can weigh or measure my ingredients accurately using measuring cups or electronic scales</p> <p>I can prepare food safely and hygienically and describe what that means</p>	<p>I can measure and mark out to the nearest cm</p> <p>I can join materials using glue, staples or string</p>	<p>I can join using running stitch</p> <p>I can decorate textiles using a number of techniques (such as dyeing, adding sequins or printing)</p>		I can make a product that uses levers, wheels and winding mechanisms to create movement	<p>I can use materials to practice drilling, gluing, screwing and nailing materials to make them stronger.</p> <p>I can measure and mark out materials with care and use safe ways of</p>	

DESIGN AND TECHNOLOGY SKILLS

						cutting it, including using a junior hack saw. I can use a range of joint	
Evaluate <input type="checkbox"/> explore and evaluate a range of existing products <input type="checkbox"/> evaluate their ideas and products against design criteria	I can talk about my own work I can say how I can improve my own work I can talk about the work of others I can make suggestions on how others can improve their work I can recognise that my designs meet a range of different needs						
Technical knowledge <input type="checkbox"/> build structures, exploring how they can be made stronger, stiffer and more stable <input type="checkbox"/> explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	I can describe properties of food ingredients, smell, texture and consistency	I can describe the different properties: touch, insulation, texture and waterproof		I can say how a product works I can use key vocabulary when explaining how a product works I can describe the properties of the materials I am using.			

DESIGN AND TECHNOLOGY SKILLS

YEAR 3							
KS 2 National Curriculum Assessment criteria	skills						
	FOOD	MATERIALS	TEXTILES	ELECTRICALS & ELECTRONICS	MECHANISMS	STRUCTURES	
<p>Design</p> <p>☑ 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</p> <p>☑ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p>I Can select ingredients for my food product</p> <p>I can create a recipe</p>	<p>I can generate ideas and recognise that my designs have to meet a range of differing needs</p> <p>I can make realistic plans to achieve my aims</p> <p>I can clarify my ideas using labelled sketches and models to communicate the details of my designs.</p> <p>I can disassemble products to understand how they work to inform my own plans</p> <p>I can identify some of the great designers in all areas of study to generate my ideas</p> <p>I can model designs using software</p>					
<p>Make ☑ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <p>☑ 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</p>	<p>I can prepare ingredients hygienically using appropriate utensils</p> <p>I can assure I am using the correct amount of ingredients by weight or quantity</p>	<p>I can cut materials accurately and safely by selecting appropriate tool.</p> <p>I can select appropriate joining techniques.</p> <p>I can create a product that</p>	<p>I can join textiles using appropriate stitching techniques.</p> <p>I can choose appropriate techniques to decorate textiles.</p> <p>I can use sharp scissors accurately to</p>		<p>I can apply mechanisms to create movement</p> <p>I can combine a number of components well in my product</p>	<p>I can apply texture or design to my structure</p> <p>I can shape my product using techniques and tools that lead to a high quality finish.</p>	

DESIGN AND TECHNOLOGY SKILLS

	<p>I can follow a recipe</p> <p>I can present my product to impress the intended user.</p>	<p>has a good finish so that a user will find it both useful and attractive.</p>	<p>cut textiles.</p> <p>I can combine textiles to add strength or visual appeal.</p>			<p>I can make cuts accurately (scissors, snips, saws)</p> <p>I can make holes accurately</p> <p>I can join my structure using both permanent n and temporary fastenings.</p>	
<p>Evaluate</p> <ul style="list-style-type: none"> 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 	<p>I can evaluate my ideas and recognize my design has to meet a range of differing needs.</p> <p>I can refer and improve my plans to achieve an aim</p> <p>I can create labels on diagrams to refer to and evaluate the details of my designs</p> <p>I can control and monitor models using software designs for this purpose.</p>						
<p>Technical knowledge</p> <ul style="list-style-type: none"> 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 	<p>I can describe my food in terms of taste, texture and relate this to the intended purpose of the</p>	<p>I can make informed choices based on properties of materials.</p>	<p>I can persuade others to take interest in my product using persuasive writing skills that include technical key words.</p> <p>I can use key vocabulary when designing my ideas</p> <p>I can use key vocabulary when developing design plans</p> <p>I can review my original idea using key vocabulary related to the purpose</p>				

DESIGN AND TECHNOLOGY SKILLS

<p>linkages]</p> <ul style="list-style-type: none">▪ 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.	<p>food</p> <p>I can explain how my product has been cooked or chilled to change the nature of the raw ingredients.</p>		
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DESIGN AND TECHNOLOGY SKILLS

YEAR 4							
KS 2 National Curriculum Assessment criteria	skills						
	FOOD	MATERIALS	TEXTILES	ELECTRICALS & ELECTRONICS	MECHANISMS	STRUCTURES	
<p>Design</p> <p>☑ 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</p> <p>☑ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p>I can design a food product that uses a selection of ingredients to meet the identified need (e.g. healthy snack, packed lunch)</p> <p>I can plan to present my product using other DT skills.</p> <p>I can show that I understand that cooking alters flavour and use this in my designs</p>	<p>I can generate ideas by collecting and using information and recognise that my designs have to meet a range of differing needs</p> <p>I can make realistic plans to achieve my aims and take the views of the users into account</p> <p>I can clarify my ideas using labelled sketches and models to communicate the details of my designs.</p> <p>I can disassemble products to understand how they work to inform my own plans</p> <p>I can identify some of the great designers in all areas of study to generate my ideas</p> <p>I can model designs using software</p>					

DESIGN AND TECHNOLOGY SKILLS

	FOOD	MATERIALS	TEXTILES	ELECTRICALS & ELCETRONICS	MECHANISMS	STRUCTURES	
<p>Make ☑ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <p>☑ 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</p>	<p>I can measure ingredients to the nearest gram accurately</p> <p>I can follow a recipe</p> <p>I can assemble or cook ingredients controlling the temperate of the oven.</p> <p>I can make informed choices based on my knowledge of food safety (unsafe raw foods)</p>	<p>I can measure and mark out to the nearest mm and then scoring and folding to shape materials accurately</p> <p>I can apply appropriate cutting and shaping techniques that include cuts that are the perimeter of the material (such as slots or cut outs)</p> <p>I can use suitable mouldable materials selected for the purpose of my product</p>	<p>I can select appropriate techniques to decorate textiles</p> <p>I show that I understand the need for a seam allowance.</p> <p>I can include structural changes such as plaiting or weaving to create new products such as belts.</p>	<p>I have explored mechanical movement using hydraulics and pneumatics.</p> <p>I can create a series and parallel circuits</p>	<p>I can use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product Such as levers, winding mechanisms, pulleys and gears</p>	<p>I can choose suitable techniques to construct products</p> <p>I can strengthen materials using suitable techniques.</p>	

DESIGN AND TECHNOLOGY SKILLS

<p>Evaluate</p> <ul style="list-style-type: none"> ▪ 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 	<p>I can evaluate my ideas and recognize my design has to meet a range of differing needs.</p> <p>I can refer and improve my plans to achieve an aim</p> <p>I can create labels on diagrams to refer to and evaluate the details of my designs</p> <p>I can improve my product acknowledging that it has changed during the drying process.</p> <p>I can control and monitor models using software design for this purpose</p>
<p>Technical knowledge</p> <p>☑ apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p>☑ understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p> <p>☑ understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>☑ apply their understanding of computing to program, monitor and control their products.</p>	<p>I can persuade others to take interest in my product using persuasive writing skills that include technical key words.</p> <p>I can use key vocabulary when designing my ideas</p> <p>I can use key vocabulary when developing design plans</p> <p>I can review my original idea using key vocabulary related to the purpose</p>

DESIGN AND TECHNOLOGY SKILLS

YEAR 5							
KS 2 National Curriculum Assessment criteria	skills						
	FOOD	MATERIALS	TEXTILES	ELECTRICALS & ELECTRONICS	MECHANISMS	STRUCTURES	
<p>Design</p> <p>☑ 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</p> <p>☑ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p>I can design recipes using ratio and proportions to scale up or scale down ingredients</p>	<p>I can generate ideas and recognise that my designs have to meet a range of differing needs using various sources of information</p> <p>I can make realistic plans to achieve my aims</p> <p>I can clarify my ideas using labelled sketches and models to communicate the details of my designs.</p> <p>I can disassemble products to understand how they work to inform my own plans</p> <p>I can combine elements of design from great designers throughout history giving reasons for my choice.</p> <p>I can model designs using software</p> <p>I can create innovative designs that improve upon existing products</p>					
<p>Make ☑ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <p>☑ 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</p>	<p>I Can consider the importance of correct storage and handling of ingredients, using knowledge of micro-organisms</p>	<p>I can cut materials with precision and refine the finish with appropriate tools such as sanding wood</p> <p>I can select materials based on the</p>	<p>I can create objects that employ a seam allowance</p> <p>I can join textiles with a combination of stitching techniques such as back stitch for seam and running stitch</p>	<p>I can use my science skills to alter the way my electrical products behave</p> <p>(resistance, batteries, in series or parallel, variable</p>	<p>I can convert rotary motion to linear using gears</p> <p>I can write code to control and monitor models ad products</p>	<p>I can develop a range of practical skills to create products (cutting, drilling, screwing, nailing, gluing, filling</p>	

DESIGN AND TECHNOLOGY SKILLS

	<p>I can demonstrate a range of baking and cooking skills</p> <p>I can use proportions and ratios to produce recipes scaling up or down for different quantities.</p>	<p>final finished product's use</p>	<p>to attach decoration.</p> <p>I can experiment with textiles until I find the right mix of affordability, appeal and appropriateness for the job</p>	<p>resistance to dim lights or control speed)</p>		<p>sanding)</p>	
<p>Evaluate</p> <ul style="list-style-type: none"> ▪ 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 	<p>I can evaluate my ideas and recognize my design has to meet a range of differing needs.</p> <p>I can refer and improve my plans to achieve an aim</p> <p>I can create labels on diagrams to refer to and evaluate the details of my designs</p> <p>I can improve my product acknowledging that it has changed during the drying process.</p> <p>I can control and monitor models using software design for this purpose</p> <p>I can evaluate the design of a product and suggest improvements to the user experience.</p>						

DESIGN AND TECHNOLOGY SKILLS

<p>Technical knowledge</p> <p>☑ apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p>☑ understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p> <p>☑ understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>☑ apply their understanding of computing to program, monitor and control their products.</p>	<p>I can persuade others to take interest in my product using persuasive writing skills that include technical key words.</p> <p>I can use key vocabulary when designing my ideas</p> <p>I can use key vocabulary when developing design plans</p> <p>I can review my original idea using key vocabulary related to the purpose</p>
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DESIGN AND TECHNOLOGY SKILLS

YEAR 6							
KS 2 National Curriculum Assessment criteria	skills						
	FOOD	MATERIALS	TEXTILES	ELECTRICALS & ELECTRONICS	MECHANISMS	STRUCTURES	
<p>Design</p> <p>☑ 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</p> <p>☑ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p>I can create and refine recipes including ingredients, methods, cooking time and temperature.</p>	<p>I can generate ideas and recognise that my designs have to meet a range of differing needs using various sources of information</p> <p>I can make realistic plans to achieve my aims</p> <p>I can clarify my ideas using labelled sketches and models to communicate the details of my designs.</p> <p>I can disassemble products to understand how they work to inform my own plans</p> <p>I can combine elements of design from great designers throughout history giving reasons for my choice.</p> <p>I can use prototypes, cross sectional diagrams and computer aided designs to represent designs</p> <p>I Can take account that resources may be limited eg budget, time, availability</p>					
<p>Make ☑ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <p>☑ 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</p>	<p>I can use my science knowledge of irreversible changes to create food products that combine to make a new material.</p>	<p>I can show that I understand the qualities of materials to choose appropriate tools to cut and shape e.g stiff fabric require sharper scissors than</p>	<p>I can use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles</p> <p>I can combine art skills to add colour and texture to my work.</p>	<p>I can create circuits using electronic kits that employ a number of components (such as LEDs resistors, transistors and chips)</p>	<p>I can use innovative combinations of electronics in product design</p> <p>I can write code to control and monitor models and products</p>	<p>I can pay attention to detail do that my products have a high degree of precision and do the intended job well (e.g handle on a cup is</p>	

DESIGN AND TECHNOLOGY SKILLS

		<p>paper. I can create a finish that adds extra appeal. Sometimes including the addition of other materials I can pay attention to finishes of edges sometimes adding other materials (edging strip)</p> <p>I can make precise measurement so that joins, holes and openings are in exactly the right place.</p>	<p>I can mark out using my own patterns and templates</p> <p>I can join textiles using stitching, embroidering and plaiting to make a durable and desirable product.</p>			<p>designed to be an insulator.)</p> <p>I can create a finished product that is well received by intended users.</p>	
<p>Evaluate</p> <ul style="list-style-type: none"> ▪ 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 	<p>I can evaluate my ideas and recognize my design has to meet a range of differing needs.</p> <p>I can reflect on my designs and develop them bearing in mind the way they will be used.</p> <p>I can improve my product acknowledging that it has changed during the drying process.</p> <p>I can test and evaluate my products, showing that I understand the situations my product will have to work</p>						

DESIGN AND TECHNOLOGY SKILLS

<p>their work</p> <ul style="list-style-type: none"> ▪ understand how key events and individuals in design and technology have helped shape the world 	<p>I can control and monitor models using software design for this purpose</p> <p>I can evaluate the design of a product and suggest improvements to the user experience.</p>
<p>Technical knowledge</p> <ul style="list-style-type: none"> ☑ 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. 	<p>I can persuade others to take interest in my product using persuasive writing skills that include technical key words.</p> <p>I can use key vocabulary when designing my ideas</p> <p>I can use key vocabulary when developing design plans</p> <p>I can review my original idea using key vocabulary related to the purpose</p>