

Design Technology Year 3	Autumn	Spring	Summer
	<p>Seasonal Cooking (cooking and nutrition)</p>	<p>Mechanical Posters (mechanical systems)</p> <p>(See Lesson: Understanding how a range of mechanisms create movement KS2 Design and technology Oak National Academy (thenational.academy))</p>	<p>Juggling Balls (textiles)</p> <p>(Twinkl)</p>
<p>Final Outcome</p>	<p>To design and create a winter menu using seasonal products and to create an edible item in the final session. Soups, pastries, pasty, pasta dish,</p>	<p>To create a poster or card involving moving parts using joints and linkages (pivots) of card pieces, (book cover with moving parts)</p>	<p>Create a set of juggling balls based on a design criteria</p>
<p>Key Skills taught</p>	<ul style="list-style-type: none"> - Explore and investigate existing products (focus on: soups: looks, smell, taste, nutrition) - Develop understanding of seasonality: recognising foods that are available and certain times of the year - Develop understanding for chopping: claw hold, grating, dicing, slicing, grating - Design final outcome: create a plan for a healthy soup with seasonal vegetables in - Produce final outcome: soup with seasonal vegetables in that uses different chopping techniques - Evaluate final design- use reflection sheet 	<ul style="list-style-type: none"> - Explore and investigate existing products (focus on: existing mechanical systems- pull tabs this might be in cards or books, scissors, pegs etc, identify input movement and output movement) - Develop understanding of levers and linkages: identify in existing products, inputs and outputs, create simple mechanism with lever and pivot, identify pivots - Develop understanding for pivots: fixed pivots and loose pivots - Design final outcome: create a plan for a mechanical poster to promote recycling and using recycling used materials- create prototype - Produce final 3D mechanical poster: using levers, and pivots - Evaluate final design- use reflection sheet 	<ul style="list-style-type: none"> - Explore and investigate existing products (focus on: existing juggling balls: design, structure, materials) - Develop understanding for filling and joining: use a wide range of materials to fill juggling balls with and use a hemming stitch - Understand the impact of textiles: recognise the uses and impact of decorative fabrics - Design final outcome: create a plan for a juggling ball using a labelled diagram- create prototype - Produce final juggling balls: using appropriate textiles, fillings and joins - Evaluate final design- use reflection sheet
<p>Key Vocabulary</p>	<p>Nutrition, seasonal, recipes, vegetarian, vegan, dietary, home grown, British produce,</p>	<p>Levers, linkage(pivot), prototypes, recycled products,</p>	<p>Dye, textiles, hemming, stitching, filling, function, cutting, shaping, aesthetical</p>
<p>N.C A) 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 B) generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design C) select from and use a wider range of tools and equipment to perform practical</p>	<p>(A, C, D, E, F, L, M, N)</p> <ul style="list-style-type: none"> • I can explain what the term 'seasonal food' means. • I know that different parts of the world have different seasonal food. • I can discuss the benefits and problems of unseasonal food being available in shops all year round. • I know that some foods, like wheat, are available all year round in the UK. • I can practise cooking skills including slicing, dicing, beating, whisking, folding, sieving, rolling and grating. • I can follow a recipe to make fairy cakes. • I can describe the cycle of wheat production in the UK. 	<p>(A, B, C, D, F, I)</p> <ul style="list-style-type: none"> • identify the design features of their products that will appeal to intended customers; • use their knowledge of a broad range of existing products to help generate their ideas; • explain how particular parts of their products work; • use annotated sketches and cross-sectional drawings to develop and communicate their ideas; • when planning, start to explain their choice of materials and components including function and aesthetics; • test ideas out through using prototypes; • develop and follow simple design criteria; 	<p>(A, B, G, H, F)</p> <ul style="list-style-type: none"> • Investigate a range of existing products. • Develop a design based around a design criteria. • Use appropriate techniques to decorate fabric. • With support create a hem using a running stitch and Analyse and test a range of existing products. • Develop a design aimed at particular individuals or groups. • Explain why different fabric decoration techniques have been chosen. • With some independence, use a running

<p>tasks [for example, cutting, shaping, joining and finishing], accurately</p> <p>D) 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>E) investigate and analyse a range of existing products</p> <p>F) evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>G) understand how key events and individuals in design and technology have helped shape the world</p> <p>H) apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p>I) understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p> <p>J) understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>K) apply their understanding of computing to program, monitor and control their products</p> <p>L) understand and apply the principles of a healthy and varied diet</p> <p>M) prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> <p>N) understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</p>	<ul style="list-style-type: none"> • I can distinguish between fruits that are grown in the UK and those that are grown abroad. • I know how food producers can speed up or slow down the ripening process to make fruits and vegetables available all year round. • I can follow a recipe to make fruit tarts using seasonal fruit. • I can follow a recipe to make stuffed peppers. • I know some of the nutrients we get from fruits, vegetables, meat, fish and dairy products. • I know when certain meats are in season in the UK and which are available all year round. • I can follow a recipe to make meatballs. • I know some vegetarian options that provide the same nutrients as meat. • I can explain how fish are caught or reared, processed and used in healthy meals. <p>I can use what I have learnt about seasonal food to design healthy meals and menus.</p>	<ul style="list-style-type: none"> • work in a broader range of relevant contexts, for example entertainment, the home, school, leisure, food industry and the wider environment. • explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose; • consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product; • evaluate their product against their original design criteria; • understand and demonstrate how mechanical and electrical systems have an input and output process; • explain how mechanical systems such as levers and linkages create movement; use mechanical systems in their products. 	<p>stitch and an overcast stitch explaining why these methods are suitable for the task.</p> <ul style="list-style-type: none"> • Explain how analysis of products has influenced their design making decisions. • Evaluate and refine their own ideas against a design criteria, considering the views of others. • Identify different techniques used for the decoration of fabrics and explain why they would, or would not be appropriate to use to decorate their juggling balls. • Name and understand the use of different stitches.
<p>Design Technology Year 4</p>	<p>Autumn</p>	<p>Spring</p>	<p>Summer</p>
	<p>Seasonal Stockings (Textiles)</p>	<p>Greenhouses (Structures)</p>	<p>Light-up Signs (Electrical systems)</p>
<p>Final Outcome</p>	<p>To create a Christmas stocking with designs utilising sewing skills, printing and attaching materials</p>	<p>To create a mini-greenhouse using a stable structure.</p>	<p>To design and create a 3d light box which includes images or written text which lights from behind using led lights. Diorama style creation</p>
<p>Key Skills taught</p>	<ul style="list-style-type: none"> - Explore and investigate existing products (focus on: existing stockings, function- size, join, fabric- appearance-colour, decoration and fabric) 	<ul style="list-style-type: none"> - Explore and investigate existing products (focus on: existing greenhouses: materials, size, structures) - Develop understanding of stable structures: investigate existing stable structures 	<ul style="list-style-type: none"> - Explore and investigate existing products (focus on: types of illuminated signs, ability to give information, attracting attention, giving directions and advertise)

	<ul style="list-style-type: none"> - Develop understanding of different joining techniques: running and over stitch , zigzag stitch) - Develop understanding for adding designs to a stocking: embroidery, cut out designs - Design final outcome: create a plan for stocking with different joins and design on the front - Produce final outcome: stocking - Evaluate final design- use reflection sheet 	<ul style="list-style-type: none"> - Develop understanding for different materials suitability: test different materials and their suitability for keeping in heat - Design final outcome: create a plan for mini-greenhouse with understanding of stable structures and materials needed - Produce final outcome: mini-greenhouse - Evaluate final design: use reflection sheet 	<ul style="list-style-type: none"> - Develop understanding of using LED bulbs and resistors - Develop understanding for producing frames: wooden frames, foam frames, thick card - Design final outcome: design an illuminated sign for a purpose with an electrical circuit - Produce final illuminated sign - Evaluate final design- use reflection sheet
Key Vocabulary	Needle, thread, over stitch, zig zag stitch, running stitch, embroider,	Stable, structure, greenhouse, frame, diagram, dowelling	LED , iridescent bulbs, incandescent, shadows, illuminated signs, transparent, translucent, opaque
<p>N.C</p> <p>A) 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>B) 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>C) 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>D) 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>E) investigate and analyse a range of existing products</p> <p>F) evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>G) understand how key events and individuals in design and technology have helped shape the world</p> <p>H) apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p>I) understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p>	<p>(A, B, C, D, E, F)</p> <p>I can explain the difference between the function and visual appeal of a product.</p> <ul style="list-style-type: none"> • I can evaluate the function and visual appeal of a variety of Christmas stockings. • I can use pins to temporarily fasten two pieces of fabric together. • I can use running stick, back stitch, over stitch and zigzag stitch to join two pieces of fabric together. • I can hide the finishing knot. • I can identify a variety of decorative techniques that have been used to decorate Christmas stockings. • I can sew a button, bead, sequin or pipe cleaner onto a piece of fabric. • I can embroider shapes and patterns into a piece of fabric. • I can use appliqué to add decoration to a piece of fabric. • I can design a Christmas stocking incorporating a range of decorative techniques. • I can use a template to cut out front and back pattern pieces. • I can follow a design to create a Christmas stocking. • I can evaluate the function and visual appeal of my finished Christmas stocking. 	<p>(A, B, C, D, E, F, H.)</p> <p>I can explore and analyse illuminated signs.</p> <ul style="list-style-type: none"> • I can create a simple circuit with incandescent bulbs and a switch. • I can describe the difference between an LED and an incandescent light bulb. • I can create a simple circuit with an LED bulb and a resistor. • I can make a circuit with a string of LED lights. • I can design an illuminated light box against a set of design criteria. • I can select materials, tools and components to create a free-standing structure. • I can make a stable, free-standing structure to house an electrical circuit. • I can strip, twist and join wire to make permanent connections. • I can insert an electrical circuit into a free-standing structure to create an illuminated light box. • I can evaluate the effectiveness of my finished product against the design criteria. 	<p>(A, B, C, D, E, F, J, K, L)</p> <p>I can explore and analyse illuminated signs.</p> <ul style="list-style-type: none"> • I can create a simple circuit with incandescent bulbs and a switch. • I can describe the difference between an LED and an incandescent light bulb. • I can create a simple circuit with an LED bulb and a resistor. • I can make a circuit with a string of LED lights. • I can design an illuminated light box against a set of design criteria. • I can select materials, tools and components to create a free-standing structure. • I can make a stable, free-standing structure to house an electrical circuit. • I can strip, twist and join wire to make permanent connections. • I can insert an electrical circuit into a free-standing structure to create an illuminated light box. • I can evaluate the effectiveness of my finished product against the design criteria.

<p>J) understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>K) apply their understanding of computing to program, monitor and control their products</p> <p>L) understand and apply the principles of a healthy and varied diet</p> <p>M) prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> <p>N) understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</p>			
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Structures / textiles / mechanical systems / electrical systems / programming / cooking and nutrition