

Design Technology Knowledge and Skills Progression

Year	National Curriculum	Topic & Trips	Knowledge (to include: Design, Make and evaluate)	Skills (to include: Design, Make and evaluate)	Vocabulary
EYFS Autumn	<p>ELG: Creating with Materials</p> <ul style="list-style-type: none"> • 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. <p>Technology: <i>There are no early learning goals that directly relate to computing objectives, though it is still expected that children will be introduced to appropriate technology and use it within their provision</i></p>	<p>Project Focus: - Nativity</p>	<p>To name and use colours for a particular purpose To know how to use different construction materials To know how to work with tools such as scissors, craft tools etc. safely To know how to use different techniques for joining materials (Glue Stick, PVA) To know how to manipulate materials</p>	<p>Introduce 'creative areas' – encourage independent use of resources Daily resources/materials provided for self-expression and exploration e.g. paints, pastels, playdough, clay, craft modelling, mark-making Model 'small world play' encouraging imagination using construction resources and natural materials</p>	<p>Names of Primary colours (use rainbow as reference) Scissors Knife Hole punch PVA/Glue Stick Sellotape Masking Tape Join, fix, attach</p>
EYFS Spring		<p>Project Focus: - Stop Frame animation</p>	<p>To know how to use different mark making tools such as art pencils, pastels, chalk To know how to use different techniques for joining materials (Glue Stick, PVA, Masking Tape, Tape, Split Pins) To know about basic cooking techniques (chopping, mixing, stirring) To know how to make props and costumes for different role play scenarios To know how to make observational drawings</p>	<p>Develop Role-play Areas – linked to children's interests. Generate resources, props and storyboards to enable children to follow storyline. Introduce stop-frame animation and build model sets (linked to interests). Look at different mediums of art (replicate famous artists work and techniques). Create an art gallery for parents to visit – exhibit children's work (common theme)</p>	<p>Coloured pencils, pens, chalks, Pastels Charcoal Texture, effect Chop, mix, stir Stop-frame animation Storyboard Edit Role play Sets, props Art work/gallery Artists</p>
EYFS Summer		<p>Project Focus: - Art exhibition</p>	<p>To know which prime colours you mix together to make secondary colours To know how to use and refine a variety of artistic effects to express their ideas and feeling To know how to share creations, talk about process and evaluate their work</p>	<p>Give children an insight into new musical worlds. Introduce them to different kinds of music from across the globe, including traditional and folk music from Britain. Encourage children to replicate choreographed dances, such as pop songs and traditional dances from around the world.</p>	<p>Names of Primary/secondary colours (use colour spectrum as reference) Music types/genres Evaluate, discuss, adapt, change</p>
1 (Autumn)	<p>Design purposeful, functional, appealing products Select from and use a range of tools and equipment to perform practical tasks. Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria</p>	<p>Textile: Puppets</p>	<p>To know that 'joining technique' means connecting two pieces of material together. To know that there are various temporary methods of joining fabric by using staples, glue or pins. To understand that a template (or fabric pattern) is used to cut out the same shape multiple times. To know that a design idea is useful to</p>	<p>To be able to join fabrics together using different methods. To be able to test out joining techniques and evaluate which would work best for a specific material. To be able to join two fabrics together accurately.</p>	<p>decorate design fabric glue model hand puppet safety pin staple stencil template</p>

Design Technology Knowledge and Skills Progression

	(Cross curricular English: becoming very familiar with key stories, fairy stories and traditional tales, retelling them and considering their particular characteristics')		see how an idea will look.	To be able to embellish a design using joining methods.	
1 (Spring)	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. (Cross curricular Maths: geometry- properties of shapes)	<i>Structures: Windmills</i>	To know that the sails or blades of a windmill are moved by the wind. To know that stable structures do not topple. To know that adding weight to the base of a structure can make it more stable. To know that design criteria is a list of points to be included in the design.	To be able to create a stable structure. To be able to use tools and equipment accurately and make part of a structure. To be able to join parts of a structure. To be able to evaluate a structure.	Client Design Design criteria Evaluation Net Stable Strong Structure Test weak axle turbine windmill
1 (Summer)	Understand where food comes from. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Use the principles of a healthy and varied diet to prepare dishes. (Cross curricular Science: Identifying and classifying. Using their	Cooking and Nutrition: Smoothies	To know that a blender is a machine which mixes ingredients together into a smooth liquid. To know that a fruit has seeds and a vegetable does not. To know that fruits grow on trees and vines and that vegetables can grow either above or below ground.	To be able to identify fruits. To be able to describe where fruits and vegetables grow. To be able to practise food preparation skills. To be able to select ingredients for a recipe To be able to apply food preparation skills to a recipe To evaluate against the design brief.	blender cut fruit ingredients juice juicer leaf root seed stem table knife vegetable

Design Technology Knowledge and Skills Progression

	observations and ideas to suggest answers to questions.				
2 (Autumn)	<p>Build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>Explore and evaluate a range of existing products.</p> <p>Evaluate ideas and products against design criteria.</p> <p>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. (Cross curricular links to maths: 2D and 3D shapes)</p>	Structures: Baby Bear's Chair	<p>To know that shapes and structures with wide, flat bases or legs are the most stable.</p> <p>To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move.</p> <p>To know that a 'stiff' structure or material is one which does not bend easily.</p>	<p>To be able to explore the concept and features of structures and the stability of different shapes.</p> <p>To be able to make a structure according to design criteria.</p> <p>To be able to produce a finished structure and evaluate its strength, stiffness and stability.</p>	<p>man-made</p> <p>natural</p> <p>structure</p> <p>stable</p> <p>test</p> <p>function</p> <p>mould</p> <p>strong</p> <p>weak</p>
2 (Spring)	<p>Use the basic principles of a healthy and varied diet to prepare dishes.</p> <p>Understand where food comes from.</p> <p>Understand where food comes from</p> <p>Explore and evaluate a range of existing products.</p>	Cooking and Nutrition: Balanced Diet	<p>To know what makes a balanced diet.</p> <p>To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar.</p> <p>To understand that a range of different foods from each food group should be</p>	<p>To be able to taste test food combinations.</p> <p>To be able to design and make a healthy wrap.</p> <p>To be able design based on criteria.</p> <p>To be able to evaluate a dish based on a design criteria.</p>	<p>balanced diet</p> <p>carbohydrate</p> <p>dairy</p> <p>fruit</p> <p>ingredients</p> <p>oils</p> <p>sugar</p> <p>protein</p> <p>vegetable</p> <p>alternative</p>

Design Technology Knowledge and Skills Progression

	<p>Design purposeful, functional, appealing products for themselves and other users based on design criteria.</p> <p>Evaluate their ideas and products against design criteria.</p> <p>(Cross curricular maths: compare and order lengths, mass, volume/capacity)</p>		<p>eaten, and roughly how much of each food group.</p>		<p>diet</p> <p>evaluation</p> <p>expensive</p> <p>healthy</p> <p>packaging</p> <p>refrigerator</p> <p>nutrients</p>
2 (Summer)	<p>Build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p> <p>(Cross Curricular Science: 'Pupils should be taught to: identify and compare the suitability of a variety of everyday materials)</p>	<p>Mechanism s: Ferris Wheel</p>	<p>To know that different materials have different properties and are therefore suitable for different uses.</p> <p>To know the features of a Ferris wheel - include the wheel, frame, pods, a base, an axle and an axle holder.</p> <p>To know that it is important to test a design as you go along so that you can solve any problems that may occur.</p>	<p>To be able to explore wheel mechanisms and design a Ferris wheel.</p> <p>To be able to select appropriate materials.</p> <p>To be able to build and test a moving wheel.</p> <p>To be able to make and evaluate a structure with rotating wheel.</p> <p>To be able to test and adapt a design.</p>	<p>wheel</p> <p>Ferris wheel</p> <p>Pods</p> <p>axle</p> <p>mechanism</p> <p>decorate</p> <p>evaluation</p> <p>stable</p> <p>strong</p> <p>test</p> <p>waterproof</p> <p>weak</p>
3 (Autumn)	<p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern</p>	<p>Textiles: Cross Stitch and Applique</p>	<p>To know that appliqué is a way of mending or decorating a textile by applying smaller pieces of fabric.</p> <p>To know that when two edges of fabric have been joined together it is called a seam.</p>	<p>To learn how to sew cross-stitch and to use appliqué to join two pieces of fabric.</p> <p>To be able to design and cut a template for an Egyptian collar.</p> <p>To be able to assemble fabric parts into a fabric Egyptian collar.</p>	<p>appliqué</p> <p>cross-stitch</p> <p>running stitch</p> <p>embellish</p> <p>cotton</p> <p>silk</p> <p>polyester felt</p>

Design Technology Knowledge and Skills Progression

	<p>pieces and computer-aided design. Select from and use a wide range of materials and components, including construction materials and textiles according to their characteristics. Design purposeful, functional, appealing products for themselves and other users based on design criteria. Select from and use a range of tools and equipment to perform practical tasks.</p> <p>(Cross curricular History: the achievements of the earliest civilizations RSE & PSHE: The importance of respecting others, even when they are very different from them)</p>		<p>To know that it is important to leave space on the fabric for the seam.</p> <p>To know that some products are turned inside out after sewing so the stitching is hidden.</p>	<p>To be able to decorate fabric using appliqué and cross-stitch.</p> <p>To be able to evaluate an end product.</p>	<p>pinking template</p>
<p>3 (Spring)</p>	<p>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Select from and use a wider range of tools and equipment to perform practical tasks [for</p>	<p>Cooking and Nutrition: Eating Seasonally Trip: Cadbury's World</p>	<p>To know that eating seasonal foods can have a positive impact on the environment.</p> <p>To know that not all fruits and vegetables can be grown in the UK and that they can be grown in certain seasons.</p> <p>To know that climate affects food growth.</p>	<p>To be able to explain why food comes from different places around the world.</p> <p>To be able to explain the benefits of seasonal foods.</p> <p>To be able to cut and peel fruits and vegetables safely.</p>	<p>Appearance Climate Complimentary Design Evaluate Export Import Ingredients Peel Seasonal</p>

Design Technology Knowledge and Skills Progression

	<p>example, cutting, shaping, joining and finishing], accurately. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. (Cross curricular links: Geography: climate zones, vegetation belts land use, economic activity including trade links, and the distribution of natural resources including, food and water.)</p>		<p>To know that the appearance of food is as important as taste.</p>	<p>To be able to evaluate seasonal ingredients. To be able to design based on criteria and to evaluate a dish.</p>	<p>Temperate Texture Weather</p>
<p>3 (Summer)</p>	<p>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. 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>Structures: Castles Trip: Tudor Workshop</p>	<p>To understand that wide and flat based objects are more stable. To understand the importance of strength and stiffness in structures. To understand that a castle needed to be strong and stable to withstand enemy attack. To know that a design specification is a list of success criteria for a product.</p>	<p>To be able to recognise how multiple shapes (2D and 3D) are combined to form a strong and stable structure. To be able to design a castle. To be able to construct 3D nets. To be able to construct and evaluate own work and the work of others.</p>	<p>2D shapes 3D shapes castle design criteria evaluation Façade flag key features net recyclable scoring stable strong structure tab weak</p>

Design Technology Knowledge and Skills Progression

	<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>(Cross curricular links: History: a study of an aspect or theme in British history. Maths: 2D and 3D shapes.)</p>				
<p>4 (Autumn)</p>	<p>Understand how key events and individuals in design and technology have helped shape the world.</p> <p>Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages.</p> <p>Select from and use a wider range of tools and</p>	<p>Mechanism s: Slingshot cars</p>	<p>To understand that all moving things have kinetic energy.</p> <p>To understand that kinetic energy is the energy that something (object/person) has by being in motion.</p> <p>To know that air resistance is the level of drag on an object as it is forced through the air.</p> <p>To understand that the shape of a moving object will affect how it moves due to air resistance.</p>	<p>To be able to build a car chassis.</p> <p>To be able to design a shape that reduces air resistance.</p> <p>To be able to make a model based on a chosen design.</p> <p>To be able to assemble and test a completed product evaluating it against a list of design criteria.</p>	<p>Aesthetic Air resistance Chassis Design Design criteria Function Graphics Kinetic energy mechanism net structure</p>

Design Technology Knowledge and Skills Progression

	equipment to perform practical tasks accurately.				
4 (Spring)	<p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</p> <p>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</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> <p>(Cross curricular maths: Mathematics: Measurement – estimate, compare and calculate different measures, including money in pounds and pence)</p>	<p>Cooking and Nutrition: Adapting a Recipe</p>	<p>To know that the amount of an ingredient in a recipe is known as the ‘quantity’.</p> <p>To know the following cooking techniques: sieving, creaming, rubbing method, cooling.</p> <p>To know that safety and hygiene are important when cooking.</p> <p>To know that products often have a target audience.</p>	<p>To be able to evaluate existing biscuit products and take inspiration from them.</p> <p>To be able to select ingredients and follow a budget.</p> <p>To make and test a prototype biscuit.</p> <p>To evaluate a final product.</p>	<p>Adapt</p> <p>Budget</p> <p>Combine</p> <p>Construct design</p> <p>evaluate</p> <p>fold</p> <p>hygiene</p> <p>ingredients</p> <p>market research</p> <p>sieve</p> <p>target audience</p> <p>taste</p> <p>texture</p>
4 (Summer)	<p>Understand how key events and individuals in design and technology have helped shape the world.</p>	<p>Structures: Pavilions</p>	<p>To understand what a frame structure is.</p> <p>To know that a ‘free-standing’ structure is one that can stand on its own.</p>	<p>To be able to design a stable pavilion structure that is aesthetically pleasing and select materials to create a desired effect.</p> <p>To be able to build a range of frame structures designed to support weight.</p>	<p>3D shapes</p> <p>cladding</p> <p>design criteria</p> <p>innovative</p> <p>natural</p> <p>reinforce</p>

Design Technology Knowledge and Skills Progression

	<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>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>To know that a pavilion is a decorative building or structure for leisure activities.</p> <p>To know that cladding can be applied to structures for different effects.</p> <p>To know that aesthetics are how a product looks</p>	<p>To be able to select appropriate materials to build a strong structure and for the cladding.</p> <p>To be able to reinforce corners to strengthen a structure.</p>	<p>structure</p>
<p>5 (Autumn)</p>	<p>Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated</p>	<p>Mechanisms: Pop-Up-Books</p>	<p>To know that mechanisms control movement.</p> <p>To understand that mechanisms can be used to change one kind of motion into another.</p> <p>To understand how to use sliders, pivots and folds to create paper-based mechanisms.</p>	<p>To be able to design a pop-up book.</p> <p>To be able to follow the design brief to make a pop-up book.</p> <p>To be able to use layers and spacers to cover the workings of mechanisms.</p> <p>To be able to create a high-quality product suitable for a target user.</p>	<p>CAD Caption Design Design brief Design criteria Exploded-diagram function input linkage mechanism motion</p>

Design Technology Knowledge and Skills Progression

	sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.				output pivots prototype sliders
5 (Spring)	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 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	Textiles: Stuffed Toys	<p>To know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric.</p> <p>To understand that it is easier to finish simpler designs to a high standard.</p> <p>To know that soft toys are often made by creating appendages separately and then attaching them to the main body.</p> <p>To know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely.</p>	<p>To be able to design a stuffed toy.</p> <p>To be able to sew a blanket stitch.</p> <p>To be able to create and add decorations to a fabric.</p> <p>To be able to use a blanket stitch to assemble the components of a stuffed toy.</p>	<p>accurate</p> <p>annotate</p> <p>appendage</p> <p>blanket-stitch</p> <p>design criteria</p> <p>detail</p> <p>stuffing</p> <p>template</p>
5 (Summer)	<p>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of</p>	Structures: Bridges	<p>To understand some different ways to reinforce structures.</p> <p>To understand how triangles can be used to reinforce bridges.</p> <p>To know that properties are words that describe the form and function of materials.</p> <p>To understand why material selection is important based on their properties.</p> <p>To understand the material (functional and aesthetic) properties of wood.</p>	<p>To be able to create a frame structure with focus on triangulation.</p> <p>To be able to use triangles to create truss bridges that span a given distance and support a load.</p> <p>Building a wooden bridge structure.</p> <p>To be able to independently measure and mark wood accurately.</p> <p>To be able to use the correct techniques to saw safely.</p> <p>To be able to identify where a structure needs reinforcement and use card corners for support.</p>	<p>arch bridge</p> <p>beam bridge</p> <p>bench hook/vice</p> <p>hardwood</p> <p>joints</p> <p>reinforce</p> <p>hardwood</p> <p>softwood</p> <p>truss bridge</p> <p>wood file/rasp</p>

Design Technology Knowledge and Skills Progression

	<p>others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p>			<p>To be able to adapt and improve own bridge structure by identifying points of weakness and reinforcing them as necessary.</p>	
6 (Autumn)	<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>Investigate and analyse a range of existing products</p>	<p>Electrical Systems: Steady Hand Game</p>	<p>To know that 'form' means the shape and appearance of an object. To know the difference between 'form' and 'function'. To understand that 'fit for purpose' means that a product works how it should and is easy to use. To know that 'form over purpose' means that a product looks good but does not work very well. To know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind.</p>	<p>To be able to design a steady hand game, identifying and naming the components required. To be able to draw a design from three different perspectives. To be able to make and test a circuit. To be able to incorporate a circuit into a stable base.</p>	<p>assemble battery battery pack benefit bulb bulb holder buzzer circuit circuit symbol component conductor copper fit for purpose LED insulator gross motor skills</p>

Design Technology Knowledge and Skills Progression

	<p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>(Cross curricular - Science)</p>				
<p>6 (Spring)</p>	<p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Generate, develop, model and communicate ideas through discussion and annotated sketches. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p>	<p>Structures: Playground s</p>	<p>To know that structures can be strengthened by manipulating materials and shapes.</p> <p>To understand what a 'footprint plan' is.</p> <p>To understand that in the real world, design can impact users in positive and negative ways.</p> <p>To know that a prototype is a cheap model to test a design idea.</p>	<p>To be able to design a playground with a variety of structures.</p> <p>To be able to build a range of structures.</p> <p>To be able to improve and add detail to structures.</p> <p>To be able to create a surrounding landscape.</p>	<p>Apparatus Bench hook Coping saw Dowel Jelutong Mark out Modify Natural materials Plan view Playground Prototype Reinforce Structure Tenon saw User</p>

Design Technology Knowledge and Skills Progression

					Vice
(Summer)	<p>Understand how key events and individuals in design and technology have helped shape the world.</p> <p>Understand and apply principles of a healthy and varied diet.</p> <p>Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques.</p> <p>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p> <p>(Cross curricular Science – recognising the impact of diet.</p> <p>RSE & PSHE – the principles of planning and preparing a range of healthy meals.)</p>	<p>Cooking and Nutrition: Come Dine with Me</p>	<p>To know that ‘flavour’ is how a food or drink tastes.</p> <p>To know that many countries have ‘national dishes’ which are recipes associated with that country.</p> <p>To know that ‘processed food’ means food that has been put through multiple changes in a factory.</p> <p>To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork).</p>	<p>To be able to explain the use of complementary flavours.</p> <p>To be able to research and design a three-course meal.</p> <p>To be able to explain recipe choices.</p> <p>To be able to prepare a meal using a recipe;</p> <p>To be able to understand where their food comes from;</p> <p>To be able to write up a recipe.</p>	<p>Accompaniment</p> <p>cookbook</p> <p>cross-contamination</p> <p>equipment</p> <p>farm to fork</p> <p>flavours</p> <p>ingredients</p> <p>method</p> <p>recipe</p> <p>preparation</p> <p>imperative verb</p> <p>Nationality</p> <p>Processed</p> <p>Reared</p> <p>Target audience</p> <p>Unit of measurement</p>