

			EYFS	Y1	Y2
Structures	Skills	Design	Learning the importance of a clear design criteria Including individual preferences	Learning the importance of a clear design criteria · Including individual preferences and requirements in a design	Generating and communicating ideas using sketching and modelling · Learning about different types of structures, found in the natural world and in everyday objects
		Make	Making stable structures from card, tape and glue	Making stable structures from card, tape and glue Learning how to turn 2D nets into 3D structures Following instructions to cut and assemble the supporting structure of a windmill Making functioning turbines and axles which are assembled into a main supporting structure	Making a structure according to design criteria Creating joints and structures from paper/card and tape Building a strong and stiff structure by folding paper
		Evaluate			Exploring the features of structures Comparing the stability of different shapes Testing the strength of own structures Identifying the weakest part of a structure Evaluating the strength, stiffness, and stability of own structure
	Knowledge	Technical	To understand that the shape of materials can be changed to improve the strength and stiffness of structures	To understand that the shape of materials can be changed to improve the strength and stiffness of structures To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses) To understand that axles are used in structures and mechanisms to make parts turn in a circle To begin to understand that different structures are used for different purposes To know that a structure is something that has been made and put together	To know that shapes and structures with wide, flat bases or legs are the most stable To understand that the shape of a structure affects its strength To know that materials can be manipulated to improve strength and stiffness To know that a structure is something which has been formed or made from parts To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move To know that a 'strong' structure is one which does not break easily To know that a 'stiff' structure or material is one which does not bend easily
		Additional		To know that a client is the person I am designing for To know that design criteria is a list of points to ensure the product meets the client's needs and wants To know that a windmill harnesses the power of wind for a purpose like grinding grain, pumping water or generating electricity To know that windmill turbines use wind to turn and make the machines inside work To know that a windmill is a structure with sails that are moved by the wind	To know that natural structures are those found in nature To know that man-made structures are those made by people

				To know the three main parts of a windmill are the turbine, axle and structure	
Mechanisms / Mechanical systems	Skills	Design	Designing a vehicle that includes wheels, axles and axle holders, which will allow the wheels to move Creating clearly labelled drawings which illustrate movement		<p>Selecting a suitable linkage system to produce the desired motions Designing a wheel Selecting appropriate materials based on their properties</p> <p>Creating a class design criteria for a moving monster Designing a moving monster for a specific audience in accordance with a design criteria</p>
		Make	Adapting mechanisms		<p>Selecting materials according to their characteristics · Following a design brief</p> <p>Making linkages using card for levers and split pins for pivots Experimenting with linkages adjusting the widths, lengths and thicknesses of card used Cutting and assembling components neatly</p>
		Evaluate	Testing mechanisms, identifying what stops wheels from turning, knowing that a wheel needs an axle to move		<p>Evaluating different designs Testing and adapting a design</p> <p>Evaluating own designs against design criteria · Using peer feedback to modify a final design</p>
	Knowledge	technical	<p>To know that wheels need to be round to rotate and move To understand that for a wheel to move it must be attached to a rotating axle To know that an axle moves within an axle holder which is fixed to the vehicle or toy To know that the frame of a vehicle (chassis) needs to be balanced</p>		<p>To know that different materials have different properties and are therefore suitable for different uses</p> <p>To know that mechanisms are a collection of moving parts that work together as a machine to produce movement To know that there is always an input and output in a mechanism To know that an input is the energy that is used to start something working To know that an output is the movement that happens as a result of the input To know that a lever is something that turns on a pivot To know that a linkage mechanism is made up of a series of levers</p>
		Additional	To know some real-life items that use wheels such as wheelbarrows, hamster wheels and vehicles		<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 some real-life objects that contain mechanisms</p>

					To know that it is important to test my design as I go along so that I can solve any problems that may occur
Cooking and nutrition	Skills	Design	Designing smoothie carton packaging	Designing a healthy wrap based on a food combination which work well together	
		Make	Chopping fruit and vegetables safely to make a smoothie Identifying if a food is a fruit or a vegetable Learning where and how fruits and vegetables grow	Slicing food safely using the bridge or claw grip Constructing a wrap that meets a design brief	
		Evaluate	Tasting and evaluating different food combinations Describing appearance, smell and taste Suggesting information to be included on packaging	Describing the taste, texture and smell of fruit and vegetables Taste testing food combinations and final products Describing the information that should be included on a label Evaluating which grip was most effective	
	Knowledge	Cooking and nutrition	Understanding the difference between fruits and vegetables To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber) 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 or vines To know that vegetables can grow either above or below ground To know that vegetables can come from different parts of the plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber)	To know that 'diet' means the food and drink that a person or animal usually eats To understand what makes a balanced diet To know where to find the nutritional information on packaging To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar To understand that I should eat a range of different foods from each food group, and roughly how much of each food group To know that nutrients are substances in food that all living things need to make energy, grow and develop To know that 'ingredients' means the items in a mixture or recipe To know that I should only have a maximum of five teaspoons of sugar a day to stay healthy To know that many food and drinks we do not expect to contain sugar do; we call these 'hidden sugars'	

Textiles	Skills	Design	Using a template to create a design for a puppet	Designing a pouch	
		Make	Cutting fabric neatly with scissors Using joining methods to decorate a puppet Sequencing steps for construction	Selecting and cutting fabrics for sewing Decorating a pouch using fabric glue or running stitch Threading a needle Sewing running stitch, with evenly spaced, neat, even stitches to join fabric Neatly pinning and cutting fabric using a template	
		Evaluate	Reflecting on a finished product, explaining likes and dislikes	Troubleshooting scenarios posed by teacher Evaluating the quality of the stitching on others' work Discussing as a class, the success of their stitching against the success criteria Identifying aspects of their peers' work that they particularly like and why	
	Knowledge	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 or glue To understand that a template (or fabric pattern) is used to cut out the same shape multiple times To know that drawing a design idea is useful to see how an idea will look	To know that sewing is a method of joining fabric To know that different stitches can be used when sewing To understand the importance of tying a knot after sewing the final stitch To know that a thimble can be used to protect my fingers when sewing		

		Year 3	Year 4	Year 5	Year 6	
Structures	Skills	Design	Designing a castle with key features to appeal to a specific person/purpose Drawing and labelling a castle design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours Designing and/or decorating a castle tower on CAD software	Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect Building frame structures designed to support weight	Designing a stable structure that is able to support weight Creating frame structure with focus on triangulation	Designing a playground featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs

Design Technology Progression Map

		Make	<p>Constructing a range of 3D geometric shapes using nets Creating special features for individual designs Making facades from a range of recycled materials</p>	<p>Creating a range of different shaped frame structures Making a variety of free standing frame structures of different shapes and sizes Selecting appropriate materials to build a strong structure and for the cladding Reinforcing corners to strengthen a structure Creating a design in accordance with a plan Learning to create different textural effects with materials</p>	<p>Making a range of different shaped beam bridges Using triangles to create truss bridges that span a given distance and supports a load Building a wooden bridge structure Independently measuring and marking wood accurately Selecting appropriate tools and equipment for particular tasks Using the correct techniques to saws safely Identifying where a structure needs reinforcement and using card corners for support Explaining why selecting appropriating materials is an important part of the design process Understanding basic wood functional properties</p>	<p>Building a range of play apparatus structures drawing upon new and prior knowledge of structures Measuring, marking and cutting wood to create a range of structures Using a range of materials to reinforce and add decoration to structures</p>
			Evaluate	<p>Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design Suggesting points for modification of the individual designs</p>	<p>Evaluating structures made by the class Describing what characteristics of a design and construction made it the most effective Considering effective and ineffective designs</p>	<p>Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary Suggesting points for improvements for own bridges and those designed by others</p>
	Knowledge	Technical	<p>To understand that wide and flat based objects are more stable To understand the importance of strength and stiffness in structures</p>	<p>To understand what a frame structure is To know that a 'free-standing' structure is one which can stand on its own</p>	<p>To understand some different ways to reinforce structures To understand how triangles can be used to reinforce bridges To know that properties are words that describe the form and function of materials To understand why material selection is important based on their properties To understand the material (functional and aesthetic) properties of wood</p>	<p>To know that structures can be strengthened by manipulating materials and shapes</p>
			Additional	<p>To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse - and their purpose</p>	<p>To know that a pavilion is a decorative building or structure for leisure activities To know that cladding can be applied to structures for different effects. To know that aesthetics are how a product looks</p>	<p>To understand the difference between arch, beam, truss, and suspension bridges To understand how to carry and use a saw safely</p>

			<p>To know that a façade is the front of a structure</p> <p>To understand that a castle needed to be strong and stable to withstand enemy attack</p> <p>To know that a paper net is a flat 2D shape that can become a 3D shape once assembled</p> <p>To know that a design specification is a list of success criteria for a product</p>	<p>To know that a product's function means its purpose</p> <p>To understand that the target audience means the person or group of people a product is designed for</p> <p>To know that architects consider light, shadow and patterns when designing</p>		<p>To know that a prototype is a cheap model to test a design idea</p>
Mechanisms / Mechanical systems	Skills	Design	<p>Designing a toy which uses a pneumatic system</p> <p>Developing design criteria from a design brief</p> <p>Generating ideas using thumbnail sketches and exploded diagrams</p> <p>Learning that different types of drawings are used in design to explain ideas clearly</p>	<p>Designing a shape that reduces air resistance</p> <p>Drawing a net to create a structure from</p> <p>Choosing shapes that increase or decrease speed as a result of air resistance</p> <p>Personalising a design</p>	<p>Designing a pop-up book which uses a mixture of structures and mechanisms</p> <p>Naming each mechanism, input and output accurately</p> <p>Storyboarding ideas for a book</p>	<p>Experimenting with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement</p> <p>Understanding how linkages change the direction of a force</p> <p>Making things move at the same time</p> <p>Understanding and drawing cross-sectional diagrams to show the inner working</p>
		Make	<p>Creating a pneumatic system to create a desired motion</p> <p>Building secure housing for a pneumatic system Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy</p> <p>Selecting materials due to their functional and aesthetic characteristics</p> <p>Manipulating materials to create different effects by cutting, creasing, folding, weaving</p>	<p>Measuring, marking, cutting and assembling with increasing accuracy</p> <p>Making a model based on a chosen design</p>	<p>Following a design brief to make a pop-up book, neatly and with focus on accuracy</p> <p>Making mechanisms and/or structures using sliders, pivots and folds to produce movement</p> <p>Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result</p>	<p>Measuring, marking, and checking the accuracy of the jelutong and dowel pieces required</p> <p>Measuring, marking, and cutting components accurately using a ruler and scissors</p> <p>Assembling components accurately to make a stable frame</p> <p>Understanding that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles</p> <p>Selecting appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set</p>
		Evaluate	<p>Using the views of others to improve designs</p> <p>Testing and modifying the outcome, suggesting improvements</p> <p>Understanding the purpose of exploded-diagrams through the eyes of a designer and their client</p>	<p>Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance</p>	<p>Evaluating the work of others and receiving feedback on own work</p> <p>Suggesting points for improvement</p>	<p>Evaluating the work of others and receiving feedback on own work</p> <p>Applying points of improvements</p> <p>Describing changes they would make/do if they were to do the project again</p>

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	Knowledge	technical	<p>To understand how pneumatic systems work</p> <p>To understand that pneumatic systems can be used as part of a mechanism</p> <p>To know that pneumatic systems operate by drawing in, releasing and compressing air</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 know that mechanisms control movement</p> <p>To understand that mechanisms that 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 understand that the mechanism in an automata uses a system of cams, axles and followers</p> <p>To understand that different shaped cams produce different outputs</p>
		Additional	<p>To understand how sketches, drawings and diagrams can be used to communicate design ideas</p> <p>To know that exploded-diagrams are used to show how different parts of a product fit together</p> <p>To know that thumbnail sketches are small drawings to get ideas down on paper quickly</p>	<p>To understand that products change and evolve over time</p> <p>To know that aesthetics means how an object or product looks in design and technology</p> <p>To know that a template is a stencil you can use to help you draw the same shape accurately</p> <p>To know that a birds-eye view means a view from a high angle (as if a bird in flight)</p> <p>To know that graphics are images which are designed to explain or advertise something</p> <p>To know that it is important to assess and evaluate design ideas and models against a list of design criteria</p>	<p>To know that a design brief is a description of what I am going to design and make</p> <p>To know that designers often want to hide mechanisms to make a product more aesthetically pleasing</p>	<p>To know that an automata is a hand powered mechanical toy</p> <p>To know that a cross-sectional diagram shows the inner workings of a product</p> <p>To understand how to use a bench hook and saw safely</p> <p>To know that a set square can be used to help mark 90° angles</p>
Cooking and nutrition	Skills	Design	<p>Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell, and appearance of the dish</p>			<p>Writing a recipe, explaining the key steps, method, and ingredients</p> <p>Including facts and drawings from research undertaken</p>
		Make	<p>Knowing how to prepare themselves and a workspace to cook safely in, learning the basic rules to avoid food contamination</p> <p>Following the instructions within a recipe</p>			<p>Following a recipe, including using the correct quantities of each ingredient</p> <p>Adapting a recipe based on research</p> <p>Working to a given timescale</p> <p>Working safely and hygienically with independence</p>
		Evaluate	<p>Establishing and using design criteria to help test and review dishes</p> <p>Describing the benefits of seasonal fruits and vegetables and the impact on the environment</p>			<p>Evaluating a recipe, considering taste, smell, texture, and origin of the food group</p> <p>Taste testing and scoring final products</p> <p>Suggesting and writing up points of improvements in productions</p>



Design Technology Progression Map

			Suggesting points for improvement when making a seasonal tart			Evaluating health and safety in production to minimise cross contamination
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	<p>Knowledge</p>	<p>Cooking and nutrition</p>	<p>To know that not all fruits and vegetables can be grown in the UK To know that climate affects food growth To know that vegetables and fruit grow in certain seasons To know that cooking instructions are known as a 'recipe' To know that imported food is food which has been brought into the country To know that exported food is food which has been sent to another country. To understand that imported foods travel from far away and this can negatively impact the environment To know that each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals, and fibre To understand that vitamins, minerals, and fibre are important for energy, growth and maintaining health To know safety rules for using, storing, and cleaning a knife safely To know that similar coloured fruits and vegetables often have similar nutritional benefits</p>			<p>To know that 'flavour' is how a food or drink tastes To know that many countries have 'national dishes' which are recipes associated with that country To know that 'processed food' means food that has been put through multiple changes in a factory To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork)</p>
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Design Technology Progression Map

Textiles	Skills	Design	<p>Writing design criteria for a product, articulating decisions made</p> <p>Designing a personalised book sleeve</p>	<p>Designing a stuffed toy considering the main component shapes required and creating an appropriate template</p> <p>Considering the proportions of individual components</p>	
		Make	<p>Making and testing a paper template with accuracy and in keeping with the design criteria</p> <p>Measuring, marking, and cutting fabric using a paper template</p> <p>Selecting a stitch style to join fabric, working neatly sewing small, neat stitches</p> <p>Incorporating fastening to a design</p>	<p>Creating a 3D stuffed toy from a 2D design</p> <p>Measuring, marking, and cutting fabric accurately and independently</p> <p>Creating strong and secure blanket stitches when joining fabric</p> <p>Threading needles independently</p> <p>Using applique to attach pieces of fabric decoration</p> <p>Sewing blanket stitch to join fabric</p> <p>Applying blanket stitch so the space between the stitches are even and regular</p>	
		Evaluate	<p>Testing and evaluating an end product against the original design criteria</p> <p>Deciding how many of the criteria should be met for the product to be considered successful</p> <p>Suggesting modifications for improvement</p> <p>Articulating the advantages and disadvantages of different fastening types</p>	<p>Testing and evaluating an end product and giving point for further improvements</p>	
	Knowledge	<p>To know that a fastening is something which holds two pieces of material together for example a zipper, toggle, button, press stud and velcro</p> <p>To know that different fastening types are useful for different purposes</p> <p>To know that creating a mock up (prototype) of their design is useful for checking ideas and proportions</p>	<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</p>		



Design Technology Progression Map

					that the soft toy is strong and holds the stuffing securely	
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Design Technology Progression Map