

Unit	Skills	Knowledge	
Year 1			
Making a moving Story Book	Design	Explaining how to adapt mechanisms, using bridges or guides to control the movement. Designing a moving story book for a given audience.	<ul style="list-style-type: none"> • 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. • To know some real-life items that use wheels such as wheelbarrows, hamster wheels and vehicles.
	Make	Following a design to create moving models that use levers and sliders.	
	Evaluate	Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed. Reviewing the success of a product by testing it with its intended audience.	
Textiles Puppets	Design	Using a template to create a design for a puppet.	<p>To know that 'joining technique' means connecting two pieces of material together.</p> <p>To know that there are various temporary methods of joining fabric by using staples, glue or pins.</p> <p>To understand that different techniques for joining materials can be used for different purposes.</p> <p>To understand that a template (or fabric pattern) is used to cut out the same shape multiple times.</p>
	Make	Cutting fabric neatly with scissors. Using joining methods to decorate a puppet. Sequencing steps for construction.	

			To know that drawing a design idea is useful to see how an idea will look.
	Evaluate	Reflecting on a finished product, explaining likes and dislikes.	
Cooking And Nutrition Smoothies Science	Design	Designing smoothie carton packaging by-hand.	To know that a blender is a machine which mixes ingredients together into a smooth liquid. To know that a fruit has seeds. To know that fruits grow on trees or vines. To know that vegetables can grow either above or below ground. To know that vegetables is any edible part of a plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber).
	Make	Chopping fruit and vegetables safely to make a smoothie. Juicing fruits safely to make a smoothie.	
	Evaluate	Tasting and evaluating different food combinations. Describing appearance, smell and taste. Suggesting information to be included on packaging. Comparing their own smoothie with someone else's.	
Year 2			
Baby Bear's Chair	Design	Generating and communicating ideas using sketching and modelling. <ul style="list-style-type: none"> Learning about different types of structures, found in the natural world and in everyday objects. 	<ul style="list-style-type: none"> 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
	Make	<ul style="list-style-type: none"> 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. Exploring the features of structures. 	
	Evaluate	<ul style="list-style-type: none"> Comparing the stability of different shapes. Testing the strength of own structures. 	

		<ul style="list-style-type: none"> Identifying the weakest part of a structure. Evaluating the strength, stiffness and stability of own structure. 	<p>one which is firmly fixed and unlikely to change or move.</p> <ul style="list-style-type: none"> 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. To know that natural structures are those found in nature. To know that man-made structures are those made by people.
Fairground Wheels	Design	<ul style="list-style-type: none"> Selecting a suitable linkage system to produce the desired motion. Designing a wheel. Selecting materials according to their characteristics. 	<p>To know that different materials have different properties and are therefore suitable for different uses.</p> <ul style="list-style-type: none"> To know the features of a ferris wheel include the wheel, frame, pods, a base an axle and an axle holder. To know that it is important to test my design as I go along so that I can solve any problems that may occur.
	Make	Following a design brief.	
	Evaluate	<p>Evaluating different designs.</p> <ul style="list-style-type: none"> Testing and adapting a design. 	
Balanced Diet	Design	<ul style="list-style-type: none"> Designing three wrap ideas based on a food combination which work well together. 	<p>To know that 'diet' means the food and drink that a person or animal usually eats.</p> <ul style="list-style-type: none"> To understand what makes a balanced diet. To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and
	Make	<p>Chopping foods safely to make a wrap.</p> <ul style="list-style-type: none"> Constructing a wrap that meets a design brief. Grating foods to make a wrap. Snipping smaller foods instead of cutting. 	

	Evaluate	<p>Describing the taste, texture and smell of fruit and vegetables.</p> <ul style="list-style-type: none"> • Taste testing food combinations and final products. • Describing the information that should be included on a label. • Evaluating food by giving a score. 	<p>foods high in fat and sugar.</p> <ul style="list-style-type: none"> • 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 'ingredients' means the items in a mixture or recipe.
Year 3			
Cooking and Nutrition Eating Seasonally	Design	<p>Designing a recipe for a savoury tart.</p>	<ul style="list-style-type: none"> • 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 know that eating seasonal foods can have a positive impact on the environment. • To know that similar coloured fruits and vegetables often have similar nutritional benefits. To know that the appearance of food
	Make	<ul style="list-style-type: none"> • Following the instructions within a recipe. • Tasting seasonal ingredients. • Selecting seasonal ingredients. • Peeling ingredients safely. <p>Cutting safely with a vegetable knife.</p>	
	Evaluate	<ul style="list-style-type: none"> • Establishing and using design criteria to help test and review dishes. • Describing the benefits of seasonal fruits and vegetables and the impact on the environment. <p>Suggesting points for improvement when making a seasonal tart.</p>	

			is as important as taste.
Structures: Constructing a Castle	Design	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> To understand that wide and flat based objects are more stable. To understand the importance of strength and stiffness in structures. To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse - and their purpose. To know that a façade is the front of a structure. To understand that a castle needed to be strong and stable to withstand enemy attack. To know that a paper net is a flat 2D shape that can become a 3D shape once assembled. To know that a design specification is a list of success criteria for a product.
	Make	<ul style="list-style-type: none"> Constructing a range of 3D geometric shapes using nets. Creating special features for individual designs. Making facades from a range of recycled materials. 	
	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.</p> <ul style="list-style-type: none"> Suggesting points for modification of the individual designs. 	
Textiles Pouches	Design	<ul style="list-style-type: none"> Designing a pouch. 	<ul style="list-style-type: none"> 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
	Make	<p>Selecting and cutting fabrics for sewing.</p> <ul style="list-style-type: none"> 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	<p>Troubleshooting scenarios posed by teacher.</p> <ul style="list-style-type: none"> 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. 	to protect my fingers when sewing.
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Year 4

Structures Pavilions	Design	<ul style="list-style-type: none"> Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect. 	<p>To understand what a frame structure is.</p> <ul style="list-style-type: none"> To know that a 'free-standing' structure is one which can stand on its own.
	Make	<ul style="list-style-type: none"> Building frame structures designed to support weight. 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 cladding. Reinforcing corners to strengthen a structure. Creating a design in accordance with a plan. Learning to create different textural effects with materials. 	<ul style="list-style-type: none"> 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. To know that a product's function means its purpose. To understand that the target audience means the person or group of people a product is designed for.
	Evaluate	<ul style="list-style-type: none"> Evaluating structures made by the class. Describing what characteristics of a design 	<ul style="list-style-type: none"> To know that architects consider light, shadow and

Electrical Assembly Torches		and construction made it the most effective. <ul style="list-style-type: none"> • Considering effective and ineffective designs. • 	patterns when designing.
	Design	Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas.	<ul style="list-style-type: none"> • To understand that electrical conductors are materials which electricity can passthrough. • To understand that electrical insulators are materials which electricity cannot pass through. • To know that a battery contains stored electricity that can be used to power products. • To know that an electrical circuit must be complete for electricity to flow. <p>To know that a switch can be used to complete and break an electrical circuit.</p> <ul style="list-style-type: none"> • To know the features of a torch: case, contacts, batteries, switch, reflector, lamp, lens. <p>To know facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison.</p>
	Make	<ul style="list-style-type: none"> • Making a torch with a working electrical circuit and switch. • Using appropriate equipment to cut and attach materials. <p>Assembling a torch according to the design and success criteria.</p>	
	Evaluate	<ul style="list-style-type: none"> • Evaluating electrical products. <p>Testing and evaluating the success of a final product.</p>	

Cooking and Nutrition: Adapting a recipe	Design	<ul style="list-style-type: none"> • Designing a biscuit within a given budget, drawing upon previous taste testing judgements. <p>Designing packaging for a biscuit that targets a specific group.</p>	<ul style="list-style-type: none"> • To know that the amount of an ingredient in a recipe is known as the 'quantity.' • To know that safety and hygiene are important when cooking. • To know the following cooking techniques: sieving, measuring, stirring, cutting out and shaping. • To understand the importance of budgeting while planning ingredients for biscuits. <p>To know that products often have a target audience.</p>
	Make	<ul style="list-style-type: none"> • Following a baking recipe, including the preparation of ingredients. • Cooking safely, following basic hygiene rules. • Adapting a recipe to meet the requirements of a target audience. <p>Using a cuboid net to create packaging.</p>	
	Evaluate	<ul style="list-style-type: none"> • Evaluating a recipe, considering: taste, smell, texture and appearance. • Describing the impact of the budget on the selection of ingredients. • Evaluating and comparing a range of food products. <p>Suggesting modifications to a recipe (e.g. This biscuit has too many raisins, and it is falling apart, so next time I will use less raisins).</p>	
Year 5			
Cooking and Nutrition Developing a recipe	Design	<ul style="list-style-type: none"> • Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients. • Writing an amended method for a recipe to incorporate the relevant changes to ingredients. • Designing appealing packaging to reflect a recipe. 	<ul style="list-style-type: none"> • To understand where meat comes from - learning that beef is from cattle and how beef is reared and processed. • To know that recipes can be adapted to suit nutritional needs and dietary requirements.

Textiles Making a Stuffed Toy	Researching existing recipes to inform ingredient choices.		<ul style="list-style-type: none"> • To know that I can use a nutritional calculator to see how healthy a food option is. • To understand that 'cross-contamination' means bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects. • To know that coloured chopping boards can prevent cross-contamination. • To know that nutritional information is found on food packaging. <p>To know that food packaging serves many purposes.</p>
	Make	<ul style="list-style-type: none"> • Cutting and preparing vegetables safely. • Using equipment safely, including knives, hot pans and hobs. • Knowing how to avoid cross-contamination. <p>Following a step by step method carefully to make a recipe.</p>	
	Evaluate	<ul style="list-style-type: none"> • Identifying the nutritional differences between different products and recipes. <p>Identifying and describing healthy benefits of food groups.</p>	
	Design	<ul style="list-style-type: none"> • Designing a stuffed toy, considering the main component shapes required and creating an appropriate template. <p>Considering the proportions of individual components.</p>	
	Make	<ul style="list-style-type: none"> • Creating a 3D stuffed toy from a 2D design. • Measuring, marking and cutting fabric accurately and independently. • Creating strong and secure blanket stitches when joining fabric. • Threading needles independently. • Using appliqué to attach pieces of fabric decoration. • Sewing blanket stitch to join fabric. 	

Electrical Systems Doodlers		Applying blanket stitch so the spaces between the stitches are even and regular.	then attaching them to the main body.
	Evaluate	Testing and evaluating an end product and giving point for further improvements.	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.
	Design	<ul style="list-style-type: none"> Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product. Developing design criteria based on findings from investigating existing products. Developing design criteria that clarifies the target user.	<ul style="list-style-type: none"> To know that product analysis is critiquing the strengths and weaknesses of a product. To know that 'configuration' means how the parts of a product are arranged.
	Make	<ul style="list-style-type: none"> Altering a product's form and function by tinkering with its configuration. Making a functional series circuit, incorporating a motor. Constructing a product with consideration for the design criteria. Breaking down the construction process into steps so that others can make the product.	
	Evaluate	<ul style="list-style-type: none"> Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses. Determining which parts of a product affect its function and which parts affect its form. Analysing whether changes in configuration positively or negatively affect an existing 	

		product. Peer evaluating a set of instructions to build a product.	
Year 6			
Cooking and Nutrition: Come Dine with me	Design	<ul style="list-style-type: none"> • Writing a recipe, explaining the key steps, method and ingredients. Including facts and drawings from research undertaken.	<ul style="list-style-type: none"> • 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).
	Make	<ul style="list-style-type: none"> • Following a recipe, including using the correct quantities of each ingredient. • Adapting a recipe based on research. • Working to a given timescale. Working safely and hygienically with independence.	
	Evaluate	<ul style="list-style-type: none"> • Evaluating a recipe, considering: taste, smell, texture and origin of the food group. • Taste testing and scoring final products. • Suggesting and writing up points of improvements when scoring others' dishes, and when evaluating their own throughout the planning, preparation and cooking process. Evaluating health and safety in production to minimise cross contamination.	
Textiles Waistcoats	Design	<ul style="list-style-type: none"> • Designing a waistcoat in accordance to a specification linked to set of design criteria. Annotating designs, to explain their decisions.	<ul style="list-style-type: none"> • To understand that it is important to design clothing with the client/ target customer in mind. • To know that using a template (or clothing
	Make	<ul style="list-style-type: none"> • Using a template when cutting fabric to ensure they achieve the correct shape. • Using pins effectively to secure a template to fabric without creases or bulges. • Marking and cutting fabric 	

Electrical Systems Steady Hand Game		<p>accurately, in accordance with their design.</p> <ul style="list-style-type: none"> • Sewing a strong running stitch, making small, neat stitches and following the edge. • Tying strong knots. • Decorating a waistcoat, attaching features (such as appliqué) using thread. • Finishing the waistcoat with a secure fastening (such as buttons). • Learning different decorative stitches. <p>Sewing accurately with evenly spaced, neat stitches.</p>	<p>pattern) helps to accurately mark out a design on fabric.</p> <p>To understand the importance of consistently sized stitches.</p>
	Evaluate	<p>Reflecting on their work continually throughout the design, make and evaluate process.</p>	
	Design	<ul style="list-style-type: none"> • Designing a steady hand game - identifying and naming the components required. • Drawing a design from three different perspectives. • Generating ideas through sketching and discussion. • Modelling ideas through prototypes. <p>Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'.</p>	<ul style="list-style-type: none"> • To know that batteries contain acid, which can be dangerous if they leak. <p>To know the names of the components in a basic series circuit, including a buzzer.</p> <ul style="list-style-type: none"> • To know that 'form' means the shape and appearance of an object. • To know the difference between 'form' and 'function'.
		<ul style="list-style-type: none"> • Constructing a stable base for a game. • Accurately cutting, folding and assembling a net. • Decorating the base of the game to a high quality finish. • Making and testing a circuit. <p>Incorporating a circuit into a base.</p>	<ul style="list-style-type: none"> • 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.
	Evaluate	<ul style="list-style-type: none"> • Testing own and others finished games, identifying what went well and making suggestions for improvement. • Gathering images and information about existing children's toys. 	<ul style="list-style-type: none"> • To know the importance of 'form follows function' when

		<p>Analysing a selection of existing children's toys.</p>	<p>designing: the product must be designed primarily with the function in mind.</p> <p>To understand the diagram perspectives 'top view', 'side view' and 'back'.</p>
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