Topic and Kapow unit Year3/4 A		**Autumn Term 2** **Urban Pioneers** **Castles** *Structure*	**Spring Term 1** **Natural forces**	**Spring Term 2** **I am Warrior!** **Sling shot Cars** *Mechanical*	**Summer Term 1** **Hidden in the Rainforest**	**Summer Term 2** **Sights and sounds of Britain** **Adopting a recipe** *Health and nutrition*
Design	Year 3 & 4	• 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 shape that reduces air resistance • Drawing a net to create a structure from • Choosing shapes that increase or decrease speed as a result of air resistance • Personalising a design		Designing a biscuit within a given budget, drawing upon previous taste testing
Make	Year 3 & 4	• Constructing a range of 3D geometric shapes using nets • Creating special features for individual designs • Making facades from a range of recycled materials		• Measuring, marking, cutting and assembling with increasing accuracy • Making a model based on a chosen design		Following a baking recipe • Cooking safely, following basic hygiene rules • Adapting a recipe
Evaluation	Year 3 & 4	• 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		• Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance		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 products • Suggesting modifications
Technical Knowledge	Year 3 & 4	• To understand that wide and flat based objects are more stable • To understand the importance of strength and stiffness in structures		• To understand that all moving things have kinetic energy • To understand that kinetic energy is the energy that something (object/person) has by being in motion • To know that air resistance is the level of drag on an object as it is forced through the air • To understand that the shape of a moving object will affect how it moves due to air resistance.		• To know that the amount of an ingredient in a recipe is known as the 'quantity' • To know that it is important to use oven gloves when removing hot food from an oven • To know the following cooking techniques: sieving, creaming, rubbing method, cooling •To understand the importance of budgeting while planning ingredients for biscuits

Topic and Kapow unit Year3/4 **B**		**Autumn Term** **Scrumdiddiluptious** **Seasonal cooking** *Food and nutrition*	**Spring Term 1** **Investigating India**	**Spring Term 2** **Victorians** **Electrical Posters** *Electrical Systems*	**Summer Term 1** **Blue Abyss**	**Summer Term 2** **Ancient Greeks** **Cushions** *Textiles*
Design	Year 3 & 4	• Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish		• Carry out research based on a given topic (e.g. The Romans) to develop a range of initial ideas. • Generate a final design for the electric poster with consideration to the client's needs and design criteria. • Design an electric poster that fits the requirements of a given brief. • Plan the positioning of the bulb (circuit component) and its purpose.		• Designing and making a template from an existing cushion and applying individual design criteria
Make	Year 3 & 4	• Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination • Following the instructions within a recipe		• Create a final design for the electric poster. • Mount the poster onto corrugated card to improve its strength and allow it to withstand the weight of the circuit on the rear. • Measure and mark materials out using a template or ruler. • Fit an electrical component (bulb). • Learn ways to give the final product a higher quality finish (e.g. framing to conceal a roughly cut edge).		Following design criteria to create a cushion • Selecting and cutting fabrics with ease using fabric scissors • Threading needles with greater independence • Tying knots with greater independence • Sewing cross stitch to join fabric • Decorating fabric using appliqué • Completing design ideas with stuffing and sewing the edges
Evaluation	Year 3 & 4	• 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 • Suggesting points for improvement when making a seasonal tart		• Learning to give and accept constructive criticism on own work and the work of others. • Testing the success of initial ideas against the design criteria and justifying opinions. • Revisiting the requirements of the client to review developing design ideas and check that they fulfil their needs.		• Evaluating an end product and thinking of other ways in which to create similar items

Technical Knowledge	Year 3 & 4	• 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		• To understand that an electrical system is a group of parts (components) that work together to transport electricity around a circuit. • To understand common features of an electric product (switch, battery or plug, dials, buttons etc.). • To list examples of common electric products (kettle, remote control etc.). • To understand that an electric product uses an electrical system to work (function). • To know the name and appearance of a bulb, battery, battery holder and crocodile wire to build simple circuits.		•To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric •To know that when two edges of fabric have been joined together it is called a seam •To know that it is important to leave space on the fabric for the seam •To understand that some products are turned inside out after sewing so the stitching is hidden

Topic and Kapow unit **Year 5**		**Autumn Term** **Invaders and explorers** **Bridges** *Structure*	**Spring Term 1** **WW2**	**Spring Term 2** **The Grand Canyon** **Food – what could be healthier?** *Food and nutrition*	**Summer Term 1** **Ancient Egypt**	**Summer Term 2** **Water World** **Pop up Books** Mechanical systems
Design	Year 5	Designing a stable structure that is able to support weight • Creating frame structure with focus on triangulation		• 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		• Designing a pop-up book which uses a mixture of structures and mechanisms. • Naming each mechanism, input and output accurately. • Storyboarding ideas for a book.
Make	Year 5	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		• Cutting and preparing vegetables safely • Using equipment safely, including knives, hot pans and hobs • Knowing how to avoid cross-contamination • Following a step by step method carefully to make a recipe		• Following a design brief to make a pop up book, neatly and with focus on accuracy. • Making mechanisms and/or structures using sliders, pivots and folds to produce movement. • Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result.
Evaluation	Year 5	• 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		• Identifying the nutritional differences between different products and recipes • Identifying and describing healthy benefits of food groups		• Evaluating the work of others and receiving feedback on own work. • Suggesting points for improvement.
Technical Knowledge	Year 5	• To understand some different ways to reinforce structures • To understand how triangles can be used to reinforce bridges		• To understand where meat comes from - learning that beef is from cattle and how beef is reared and processed, including key welfare issues		• To know that mechanisms control movement. • To understand that mechanisms can be used to change one kind of motion into another. • To understand how to use sliders, pivots and folds to create paper-based mechanisms.

		• 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		• To know that I can adapt a recipe to make it healthier by substituting ingredients • To know that I can use a nutritional calculator to see how healthy a food option is • To understand that 'cross-contamination' means that bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects		

Topic and Kapow unit **Year 6**		**Autumn Term** **Tudors** **Fabric Tudor Rose** *Textiles*	**Spring Term** **Animals and the planet** **Automata toys** *Mechanical* *systems*	**Summer Term** **Hola Mexico!** **Come Dine With me** *Food and nutrition*
Design	Year 6	• Designing a tudor rose in accordance to specification linked to set of design criteria to fit a specific theme • Annotating designs	•Experimenting with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement. • Understanding how linkages change the direction of a force. • Making things move at the same time. • Understanding and drawing cross-sectional diagrams to show the inner-workings of my design.	• Writing a recipe, explaining the key steps, method and ingredients • Including facts and drawings from research undertaken
Make	Year 6	• Using a template when pinning panels onto fabric • Marking and cutting fabric accurately, in accordance with a design • Sewing a strong running stitch, making small, neat stitches and following the edge • Tying strong knots • Decorating a fabric rose -attaching objects using thread and adding a secure fastening • Learning different decorative stitches • Sewing accurately with even regularity of stitches	• Measuring, marking and checking the accuracy of the jelutong and dowel pieces required. • Measuring, marking and cutting components accurately using a ruler and scissors. • Assembling components accurately to make a stable frame. • Understanding that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles. • Selecting appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set.	• 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
Evaluation	Year 6	• Evaluating work continually as it is created	• Evaluating the work of others and receiving feedback on own work. • Applying points of improvement to their toys. • Describing changes they would make/do if they were to do the project again.	• 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 in productions • Evaluating health and safety in production to minimise cross contamination
Technical Knowledge	Year 6	• To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric • To understand the importance of consistently sized stitches	• To understand that the mechanism in an automata uses a system of cams, axles and followers. • To understand that different shaped cams produce different outputs.	• 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)