DT Curriculum Plan

By the end of studying DT at Beechwood Primary School, children will be able to talk about the following themes which they cover through the Kapow Primary Scheme of work:

Cooking and nutrition: Where food comes from, balanced diet, preparation and cooking skills. Kitchen hygiene and safety. Following recipes
Mechanisms/Mechanical systems: Mimic natural movements using mechanisms such as cams, followers, levers and sliders.
Structures: Material functional and aesthetic properties, strength and stability, stiffen and reinforce structures
Textiles: Fastening, sewing, decorative and functional fabric techniques including cross stitch, blanket stitch and appliqué.
Electrical Systems: Operational series circuits, circuit components, circuit diagrams and symbols, combined to create various electrical products.
Digital World: Program products to monitor and control, develop designs and virtual models using 2D and 3D CAD software

Units and End Points

	Autumn	Spring	Summer
EYFS	Structures: Junk modelling Explore and learn about various types of permanent and temporary join. They are encouraged to tinker using a combination of materials and joining techniques in the junk modelling area.	Textiles; Bookmarks Develop and practise threading and weaving techniques using various materials and objects. They look at the history of the bookmark from Victorian times versus modern-day styles. The pupils apply their knowledge and skills to design and sew their own bookmarks.	Structures; Boats Explore what is meant by 'waterproof', 'floating' and 'sinking', then experiment and make predictions with various materials to carry out a series of tests. They learn about the different features of boats and ships before investigating their shape and structures to build their own.
Year 1	Textiles; Puppets To know that 'joining technique' means connecting two pieces of material together.	Cooking and nutrition; Smoothies Describe fruits and vegetables and explain how to identify fruits.	Mechanisms; making a moving story book To know that a mechanism is the parts of an object that move together.

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	To know that there are various temporary methods of joining fabric by using staples, glue or pins. To understand that different techniques for joining materials can be used for different purposes. 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.	Name a range of places that fruits and vegetables grow. Describe basic characteristics of fruit and vegetables. Prepare fruits and vegetables to make a smoothie.	To know that a slider mechanism moves an object from side to side. To know that a slider mechanism has a slider, slots, guides and an object. To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.
Year 2	<u>Cooking and nutrition; A balanced diet</u> 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.	<u>Structures; Baby bear's chair</u> 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.	<u>Mechanisms; Fairground wheel</u> To know that different materials have different properties and are therefore suitable for different uses. 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.
Cooking and Nutrition Years 3, 4 & 5	<u>Year 3: Eating seasonally</u> To know that not all fruits and vegetables can be grown in the UK.	<u>Year 4: Adapting a recipe</u> To know that the amount of an ingredient in a recipe is known as the 'quantity'.	<u>Year 5: What could be healthier</u> To understand where meat comes from – learning that beef is from cattle and how beef is

	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 that has been brought into the country	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.	reared and processed, including key welfare issues. 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.
Year 3, 4, 5 Cycle A	<u>Cooking & Nutrition</u> Variable by year group: See above	<u>Structures; Pavillions</u> To understand what a frame structure is. To know that a 'free-standing' structure is one that can stand on its own. 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.	<u>Digital world: Wearable Technology</u> Give a brief explanation of the digital revolution and/or remember key examples. Suggest a feature from the virtual micro:bit that is suitable for the product. Write a program that initiates a flashing LED panel, or another pattern, on the virtual micro:bit when a button is pressed. Identify errors, if testing is unsuccessful, by comparing their code to a correct example. Explain the basic functionality of their finished program. Suggest key features for a way to attach the product to the user, with some consideration for the overall theme and the user. Create annotated diagrams to help illustrate how their product is worn. Describe what is meant by 'point of sale display' with an example.

			Follow basic design requirements using computer-aided design, drawing at least one shape with a text box and bright colours, following a demonstration. Evaluate their design using a focus group.
Year 3, 4, 5 Cycle B	Cooking & Nutrition Variable by year group: See above	Digital World; Monitoring devices To know that a 'device' means equipment created for a certain purpose or job and that monitoring devices observe and record. To know that a sensor is a tool or device that is designed to monitor, detect and respond to changes for a purpose. To understand that conditional statements (and, or, if booleans) in programming are a set of rules which are followed if certain conditions are met.	Mechanical Systems; Pneumatic Toys To understand how pneumatic systems work. To understand that pneumatic systems can be used as part of a mechanism. To know that pneumatic systems operate by drawing in, releasing and compressing air.
Year 3, 4, 5 Cycle C	Cooking & Nutrition Variable by year group: See above	Textiles; fastenings To know that appliqué 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.	Electrical Systems; doodlers To know that, in a series circuit, electricity only flows in one direction. To know when there is a break in a series circuit, all components turn off. To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. To know a motorised product is one which uses a motor to function.
Year 6	Cooking and nutrition; Come dine with me	Structure; playgrounds	Electrical systems; steady hand game

	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).	To know that structures can be strengthened by manipulating materials and shapes. To understand what a 'footprint plan' is. To understand that in the real world, design can impact users in positive and negative ways. To know that a prototype is a cheap model to test a design idea.	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. To understand the diagram perspectives 'top view', 'side view' and 'back'.