Design & Technology Curriculum Map

Year 1	Autumn Food Technology	Spring Mechanisms	Summer Structures
RDPS Knowledge and Skills	**Cooking and Nutrition:** Fruits and vegetables • Describe fruits and vegetables and explain why they are a fruit or a vegetable. • 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. Kapow link D&T Fruit and Vegetables KS1 Y1 - Kapow Primary Visit to the cookery room: Autumn 1, Week 2 and 3	**Wheels and Axels:** Moving Vehicles • Explain that wheels move because they are attached to an axle. • Recognise that wheels and axles are used in everyday life, not just in cars. • Identify and explain vehicle design flaws using the correct vocabulary. • Design a vehicle that includes functioning wheels, axles, and axle holders. • Make a moving vehicle with working wheels and axles. • Explain what must be changed if there are any operational issues. Kapow link Mechanisms: Wheels and axles - Kapow Primary	**Windmills** • Identify some features that would appeal to the client (a mouse) and create a suitable design. • Explain how their design appeals to the mouse. • Make stable structures, which will eventually support the turbine, out of card, tape, and glue. • Make functioning turbines and axles that are assembled into the main supporting structure. • Say what is good about their windmill and what they could do better. Kapow link KS1 Y1 Design & Technology Constructing Windmills- Kapow Primary

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Year 2	**Cooking and Nutrition:** A Balanced Diet • Name the main food groups and identify foods that belong to each group. • Describe the taste, texture and smell of a given food. • Think of four different wrap ideas, considering flavour combinations. • Construct a wrap that meets the design brief and their plan. Kapow link Cooking and nutrition: A balanced diet – Kapow Primary Visit to the cookery room: Autumn 1, Week 4, and 5	**Mechanical Systems:** Fairground Wheel • Design and label a wheel. • Consider the designs of others and make comments about their practicality or appeal. • Consider the materials, shape, construction, and mechanisms of their wheel. • Label their designs. • Build a stable structure with a rotating wheel. • Test and adapt their designs as necessary. • Follow a design plan to make a completed model of the wheel. Kapow link Mechanisms: Fairground wheel – Kapow Primary	**Baby Bear's Chair** • Identify man-made and natural structures. • Identify stable and unstable structural shapes. • Contribute to discussions. • Identify features that make a chair stable. • Work independently to make a stable structure, following a demonstration. • Explain how their ideas would be suitable for Baby Bear. • Produce a model that supports a teddy, using the appropriate materials and construction techniques. • Explain how they made their model strong, stiff, and stable. Kapow link Structures: Baby Bear's chair - Kapow Primary

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Year 3	**Cooking and Nutrition:** Eating Seasonally • Explain that fruits and vegetables grow in different countries based on their climates. • Understand that 'seasonal' fruits and vegetables are those that grow in each season and taste best then. • Know that eating seasonal fruit and vegetables has a positive effect on the environment. • Design their own tart recipe using seasonal ingredients. • Understand the basic rules of food hygiene and safety. • Follow the instructions within a recipe. Kapow link Cooking and nutrition: Eating seasonally - Kapow Primary Visit to the cookery room: Autumn 1, week 6 and 7	**Mechanical Systems:** Pneumatic Toys • Draw accurate diagrams with correct labels, arrows, and explanations. • Correctly identify definitions for key terms. • Identify five appropriate design criteria. • Communicate two ideas using thumbnail sketches. • Communicate and develop one idea using an exploded diagram. • Select appropriate equipment and materials to build a working pneumatic system. • Assemble their pneumatic system within the housing to create the desired motion. • Create a finished pneumatic toy that fulfils the design brief. Kapow link Mechanical systems: Pneumatic toys - Kapow Primary	**Castles** • Draw and label a simple castle that includes the most common features. • Recognise that a castle is made up of multiple 3D shapes. • Design a castle with key features which satisfy a given purpose. • Score or cut along lines on the net of a 2D shape. • Use glue to securely assemble geometric shapes. • Utilise skills to build a complex structure from simple geometric shapes. • Evaluate their work by answering simple questions. Kapow link D&T Structures: Constructing a castle KS2 - Kapow Primary

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Year 4	**Cooking and Nutrition** Adapting a recipe • Follow a recipe, with some support. • Describe some of the features of a biscuit based on taste, smell, texture, and appearance. • Adapt a recipe by adding extra ingredients to it. • Plan a biscuit recipe within a budget. Kapow link Cooking and nutrition: Adapting a recipe - Kapow Primary Visit to the cookery room: Autum 2 week 1 and 2	**Electrical Systems:** Torches • Identify electrical products and explain why they are useful. • Help to make a working switch. • Identify the features of a torch and how it works. • Describe what makes a torch successful. • Create suitable designs that fit the success criteria and their own design criteria. • Create a functioning torch with a switch according to their design criteria. Kapow link Electrical systems: Torches - Kapow Primary	**Pavilions** • Produce a range of free-standing frame structures of different shapes and sizes. • Design a pavilion that is strong, stable, and aesthetically pleasing. • Select appropriate materials and construction techniques to create a stable, free-standing frame structure. • Select appropriate materials and techniques to add cladding to their pavilion. Kapow link Structure: Pavilions - Kapow Primary

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Year 5	**Cooking and Nutrition** What Could Be Healthier? • Understand how beef gets from the farm to our plates. • Present a subject as a poster with clear information in an easy-to-read format. • Contribute ideas as to what a 'healthy meal' means. • Notice the nutritional differences between different products and recipes. • Recognise nutritional differences between two similar recipes and give some justification as to why this is. • Work as a team to amend a Bolognese recipe with healthy adaptations. • Follow a recipe to produce a healthy Bolognese sauce. • Design packaging that promotes the ingredients of the Bolognese. Kapow link Cooking and nutrition: What could be healthier? – Kapow Primary Visit to the cookery room: Autumn 2, Week 3 and 4	**Electrical systems:** Doodlers • Identify simple circuit components (battery, bulb, and switch) with a basic explanation of their function. • Explain that a series circuit is assembled in a loop to allow the electricity to flow along one path. • Describe a motor as a circuit component that changes electrical energy into movement. • Provide examples of motorised products that use movement to rotate or spin different parts. • Remove and replace different parts of a Doodler, as part of a team. • Suggest ways to switch the configuration to amend the form or function of the Doodler. • Create a functional Doodler that creates scribbles on paper with or without a switch. • Identify and list each of the required materials, tools and circuit components required to build a Doodler. • Explain simply, the steps to assemble a Doodler as part of a set of instructions (or storyboard). Kapow link Electrical systems: Doodlers - Kapow Primary	**Bridges** • Identify stronger and weaker shapes. • Recognise that supporting shapes can help increase the strength of a bridge, allowing it to hold more weight. • Identify beam, arch and truss bridges and describe their differences. • Use triangles to create simple truss bridges that support a load (weight). • Cut beams to the correct size, using a cutting mat. • Smooth down any rough-cut edges with sandpaper. • Follow each stage of the truss bridge creation as instructed by their teacher. • Complete a bridge, with varying ranges of accuracy and finish, supported by the teacher. • Identify some areas for improvement, reinforcing their bridges as necessary. Kapow link D&T KS2 Structure: Bridges - Kapow Primary

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Year 6	**Cooking and Nutrition** Come Dine with Me • Find a suitable recipe for their course. • Record the relevant ingredients and equipment needed. • Follow a recipe, including using the correct quantities of each ingredient. • Write a recipe, explaining the process taken. • Explain where certain key foods come from before they appear on the supermarket shelf. Kapow link Cooking and nutrition: Come dine with me - Kapow Primary Visit to the cookery room: Autumn 2 Week 5 and 6	**Electrical Systems:** Steady Hand Game • Explain simply what is meant by 'form' (the shape of a product) and 'function' (how a product works). • State what they like or dislike about an existing children's toy and why. • Learn about skills developed through play and apply this knowledge in a survey of one or more children's toys. • Identify the components of a steady hand game. • Design a steady hand game of their own according to their design criteria, using four different perspective drawings. • Create a secure base for their game, with neat edges, that relates to their design. • Make and test a functioning circuit and assemble it within a case. Kapow link Electrical systems: Steady hand game - Kapow Primary	**Playgrounds** • Create five apparatus designs, applying the design criteria to their work. • Make suitable changes to their work after peer evaluation. • Make roughly three different structures from their plans using the materials available. • Complete their structures, improving the quality of their rough versions and applying some cladding to a few areas. • Secure their apparatus to a base. • Make a range of landscape features using a variety of materials which will enhance their apparatus. Kapow link Structure: Playgrounds - Kapow Primary