



Design & Technology Curriculum Map

EYFS

**By the end of the Early Years, we expect children to be able to:**

- ✓ Realise tools can be used for a purpose
- ✓ Handle tools, objects, construction materials and malleable materials safely and with increasing control
- ✓ Use a range of simple tools and techniques competently and appropriately
- ✓ Use simple tools to effect changes to materials
- ✓ Hold a pencil between thumb and two fingers, no longer using whole hand
- ✓ Hold a pencil near the point between two fingers with good control
- ✓ Hold a pencil comfortably using a tripod grip
- ✓ Show accuracy when drawing and copying
- ✓ Use various construction materials
- ✓ Join construction pieces together to build and balance
- ✓ Construct stacking blocks vertically and horizontally making enclosures and spaces
- ✓ Construct with a purpose in mind using a variety of resources
- ✓ Select appropriate resources and techniques needed to shape assemble and join materials
- ✓ Make use of props and materials when role playing characters in narratives and stories
- ✓ Pay attention to their teachers and follow multi-step instructions
- ✓ Have a positive sense of self and show perseverance in the face of challenge
- ✓ Share creations explaining the process they have used

**By the end of Key Stage 1, we expect children to be able to:**

- ✓ Design purposeful, functional, appealing products for themselves and other users based on design criteria
- ✓ Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
- ✓ Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- ✓ Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
- ✓ Evaluate, explore and evaluate a range of existing products
- ✓ Evaluate their ideas and products against design criteria
- ✓ Build structures, exploring how they can be made stronger, stiffer and more stable
- ✓ Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products

**By the end of Key Stage 2, we expect children to be able to:**

- ✓ Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at individuals or groups
- ✓ Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
- ✓ Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- ✓ Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities Investigate and analyse a range of existing products
- ✓ Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- ✓ Understand how key events and individuals in design and technology have helped shape the world
- ✓ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- ✓ Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- ✓ Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- ✓ Apply their understanding of computing to program, monitor and control their products.

Year 1	Autumn Food Technology	Spring Mechanisms	Summer Structures
RDPS Knowledge and Skills	<p><u>Cooking and Nutrition: Fruits and vegetables</u></p> <ul style="list-style-type: none"> <li>• Describe fruits and vegetables and explain why they are a fruit or a vegetable.</li> <li>• Name a range of places that fruits and vegetables grow.</li> <li>• Describe basic characteristics of fruit and vegetables.</li> <li>• Prepare fruits and vegetables to make a smoothie.</li> </ul> <p>Kapow link <a href="#">D&amp;T Fruit and Vegetables KS1 Y1 - Kapow Primary</a></p> <p>Visit to the cookery room: Autumn 1, Week 2 and 3</p>	<p><u>Wheels and Axels: Moving Vehicles</u></p> <ul style="list-style-type: none"> <li>• Explain that wheels move because they are attached to an axle.</li> <li>• Recognise that wheels and axles are used in everyday life, not just in cars.</li> <li>• Identify and explain vehicle design flaws using the correct vocabulary.</li> <li>• Design a vehicle that includes functioning wheels, axles, and axle holders.</li> <li>• Make a moving vehicle with working wheels and axles.</li> <li>• Explain what must be changed if there are any operational issues.</li> </ul> <p>Kapow link <a href="#">Mechanisms: Wheels and axles - Kapow Primary</a></p>	<p><u>Windmills</u></p> <ul style="list-style-type: none"> <li>• Identify some features that would appeal to the client (a mouse) and create a suitable design.</li> <li>• Explain how their design appeals to the mouse.</li> <li>• Make stable structures, which will eventually support the turbine, out of card, tape, and glue.</li> <li>• Make functioning turbines and axles that are assembled into the main supporting structure.</li> <li>• Say what is good about their windmill and what they could do better.</li> </ul> <p>Kapow link <a href="#">KS1 Y1 Design &amp; Technology Constructing Windmills- Kapow Primary</a></p>

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<p><b>Year 2</b></p>	<p><b><u>Cooking and Nutrition: A Balanced Diet</u></b></p> <ul style="list-style-type: none"> <li>• Name the main food groups and identify foods that belong to each group.</li> <li>• Describe the taste, texture and smell of a given food.</li> <li>• Think of four different wrap ideas, considering flavour combinations.</li> <li>• Construct a wrap that meets the design brief and their plan.</li> </ul> <p>Kapow link <a href="#">Cooking and nutrition: A balanced diet – Kapow Primary</a></p> <p><b>Visit to the cookery room: Autumn 1, Week 4, and 5</b></p>	<p><b><u>Mechanical Systems: Fairground Wheel</u></b></p> <ul style="list-style-type: none"> <li>• Design and label a wheel.</li> <li>• Consider the designs of others and make comments about their practicality or appeal.</li> <li>• Consider the materials, shape, construction, and mechanisms of their wheel.</li> <li>• Label their designs.</li> <li>• Build a stable structure with a rotating wheel.</li> <li>• Test and adapt their designs as necessary.</li> <li>• Follow a design plan to make a completed model of the wheel.</li> </ul> <p>Kapow link <a href="#">Mechanisms: Fairground wheel – Kapow Primary</a></p>	<p><b><u>Baby Bear’s Chair</u></b></p> <ul style="list-style-type: none"> <li>• Identify man-made and natural structures.</li> <li>• Identify stable and unstable structural shapes.</li> <li>• Contribute to discussions.</li> <li>• Identify features that make a chair stable.</li> <li>• Work independently to make a stable structure, following a demonstration.</li> <li>• Explain how their ideas would be suitable for Baby Bear.</li> <li>• Produce a model that supports a teddy, using the appropriate materials and construction techniques.</li> <li>• Explain how they made their model strong, stiff, and stable.</li> </ul> <p>Kapow link <a href="#">Structures: Baby Bear’s chair - Kapow Primary</a></p>

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Year 3	<p><u>Cooking and Nutrition: Eating Seasonally</u></p> <ul style="list-style-type: none"> <li>• Explain that fruits and vegetables grow in different countries based on their climates.</li> <li>• Understand that ‘seasonal’ fruits and vegetables are those that grow in each season and taste best then.</li> <li>• Know that eating seasonal fruit and vegetables has a positive effect on the environment.</li> <li>• Design their own tart recipe using seasonal ingredients.</li> <li>• Understand the basic rules of food hygiene and safety.</li> <li>• Follow the instructions within a recipe.</li> </ul> <p>Kapow link <a href="#">Cooking and nutrition: Eating seasonally - Kapow Primary</a></p> <p>Visit to the cookery room: Autumn 1, week 6 and 7</p>	<p><u>Mechanical Systems: Pneumatic Toys</u></p> <ul style="list-style-type: none"> <li>• Draw accurate diagrams with correct labels, arrows, and explanations.</li> <li>• Correctly identify definitions for key terms.</li> <li>• Identify five appropriate design criteria.</li> <li>• Communicate two ideas using thumbnail sketches.</li> <li>• Communicate and develop one idea using an exploded diagram.</li> <li>• Select appropriate equipment and materials to build a working pneumatic system.</li> <li>• Assemble their pneumatic system within the housing to create the desired motion.</li> <li>• Create a finished pneumatic toy that fulfils the design brief.</li> </ul> <p>Kapow link <a href="#">Mechanical systems: Pneumatic toys - Kapow Primary</a></p>	<p><u>Castles</u></p> <ul style="list-style-type: none"> <li>• Draw and label a simple castle that includes the most common features.</li> <li>• Recognise that a castle is made up of multiple 3D shapes.</li> <li>• Design a castle with key features which satisfy a given purpose.</li> <li>• Score or cut along lines on the net of a 2D shape.</li> <li>• Use glue to securely assemble geometric shapes.</li> <li>• Utilise skills to build a complex structure from simple geometric shapes.</li> <li>• Evaluate their work by answering simple questions.</li> </ul> <p>Kapow link <a href="#">D&amp;T Structures: Constructing a castle KS2 - Kapow Primary</a></p>

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<p><b>Year 4</b></p>	<p><u>Cooking and Nutrition Adapting a recipe</u></p> <ul style="list-style-type: none"> <li>• Follow a recipe, with some support.</li> <li>• Describe some of the features of a biscuit based on taste, smell, texture, and appearance.</li> <li>• Adapt a recipe by adding extra ingredients to it.</li> <li>• Plan a biscuit recipe within a budget.</li> </ul> <p>Kapow link <a href="#">Cooking and nutrition: Adapting a recipe - Kapow Primary</a></p> <p>Visit to the cookery room: Autum 2 week 1 and 2</p>	<p><u>Electrical Systems: Torches</u></p> <ul style="list-style-type: none"> <li>• Identify electrical products and explain why they are useful.</li> <li>• Help to make a working switch.</li> <li>• Identify the features of a torch and how it works.</li> <li>• Describe what makes a torch successful.</li> <li>• Create suitable designs that fit the success criteria and their own design criteria.</li> <li>• Create a functioning torch with a switch according to their design criteria.</li> </ul> <p>Kapow link <a href="#">Electrical systems: Torches - Kapow Primary</a></p>	<p><u>Pavilions</u></p> <ul style="list-style-type: none"> <li>• Produce a range of free-standing frame structures of different shapes and sizes.</li> <li>• Design a pavilion that is strong, stable, and aesthetically pleasing.</li> <li>• Select appropriate materials and construction techniques to create a stable, free-standing frame structure.</li> <li>• Select appropriate materials and techniques to add cladding to their pavilion.</li> </ul> <p>Kapow link <a href="#">Structure: Pavilions - Kapow Primary</a></p>

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<p><b>Year 5</b></p>	<p style="text-align: center;"><u><b>Cooking and Nutrition What Could Be Healthier?</b></u></p> <ul style="list-style-type: none"> <li>• Understand how beef gets from the farm to our plates.</li> <li>• Present a subject as a poster with clear information in an easy-to-read format.</li> <li>• Contribute ideas as to what a ‘healthy meal’ means.</li> <li>• Notice the nutritional differences between different products and recipes.</li> <li>• Recognise nutritional differences between two similar recipes and give some justification as to why this is.</li> <li>• Work as a team to amend a Bolognese recipe with healthy adaptations.</li> <li>• Follow a recipe to produce a healthy Bolognese sauce.</li> <li>• Design packaging that promotes the ingredients of the Bolognese.</li> </ul> <p>Kapow link <a href="#">Cooking and nutrition: What could be healthier? – Kapow Primary</a></p> <p>Visit to the cookery room: Autumn 2, Week 3 and 4</p>	<p style="text-align: center;"><u><b>Electrical systems: Doodlers</b></u></p> <ul style="list-style-type: none"> <li>• Identify simple circuit components (battery, bulb, and switch) with a basic explanation of their function.</li> <li>• Explain that a series circuit is assembled in a loop to allow the electricity to flow along one path.</li> <li>• Describe a motor as a circuit component that changes electrical energy into movement.</li> <li>• Provide examples of motorised products that use movement to rotate or spin different parts.</li> <li>• Remove and replace different parts of a Doodler, as part of a team.</li> <li>• Suggest ways to switch the configuration to amend the form or function of the Doodler.</li> <li>• Create a functional Doodler that creates scribbles on paper with or without a switch.</li> <li>• Identify and list each of the required materials, tools and circuit components required to build a Doodler.</li> <li>• Explain simply, the steps to assemble a Doodler as part of a set of instructions (or storyboard).</li> </ul> <p>Kapow link <a href="#">Electrical systems: Doodlers - Kapow Primary</a></p>	<p style="text-align: center;"><u><b>Bridges</b></u></p> <ul style="list-style-type: none"> <li>• Identify stronger and weaker shapes.</li> <li>• Recognise that supporting shapes can help increase the strength of a bridge, allowing it to hold more weight.</li> <li>• Identify beam, arch and truss bridges and describe their differences.</li> <li>• Use triangles to create simple truss bridges that support a load (weight).</li> <li>• Cut beams to the correct size, using a cutting mat.</li> <li>• Smooth down any rough-cut edges with sandpaper.</li> <li>• Follow each stage of the truss bridge creation as instructed by their teacher.</li> <li>• Complete a bridge, with varying ranges of accuracy and finish, supported by the teacher.</li> <li>• Identify some areas for improvement, reinforcing their bridges as necessary.</li> </ul> <p>Kapow link <a href="#">D&amp;T KS2 Structure: Bridges - Kapow Primary</a></p>

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Year 6	<p><u>Cooking and Nutrition Come Dine with Me</u></p> <ul style="list-style-type: none"> <li>• Find a suitable recipe for their course.</li> <li>• Record the relevant ingredients and equipment needed.</li> <li>• Follow a recipe, including using the correct quantities of each ingredient.</li> <li>• Write a recipe, explaining the process taken.</li> <li>• Explain where certain key foods come from before they appear on the supermarket shelf.</li> </ul> <p>Kapow link <a href="#">Cooking and nutrition: Come dine with me - Kapow Primary</a></p> <p>Visit to the cookery room: Autumn 2 Week 5 and 6</p>	<p><u>Electrical Systems: Steady Hand Game</u></p> <ul style="list-style-type: none"> <li>• Explain simply what is meant by ‘form’ (the shape of a product) and ‘function’ (how a product works).</li> <li>• State what they like or dislike about an existing children’s toy and why.</li> <li>• Learn about skills developed through play and apply this knowledge in a survey of one or more children’s toys.</li> <li>• Identify the components of a steady hand game.</li> <li>• Design a steady hand game of their own according to their design criteria, using four different perspective drawings.</li> <li>• Create a secure base for their game, with neat edges, that relates to their design.</li> <li>• Make and test a functioning circuit and assemble it within a case.</li> </ul> <p>Kapow link <a href="#">Electrical systems: Steady hand game - Kapow Primary</a></p>	<p><u>Playgrounds</u></p> <ul style="list-style-type: none"> <li>• Create five apparatus designs, applying the design criteria to their work.</li> <li>• Make suitable changes to their work after peer evaluation.</li> <li>• Make roughly three different structures from their plans using the materials available.</li> <li>• Complete their structures, improving the quality of their rough versions and applying some cladding to a few areas.</li> <li>• Secure their apparatus to a base.</li> <li>• Make a range of landscape features using a variety of materials which will enhance their apparatus.</li> </ul> <p>Kapow link <a href="#">Structure: Playgrounds - Kapow Primary</a></p>