



# Design & Technology Learning Map



Year	Autumn	Spring	Summer
<b>Nursery</b>	Owl baby sock puppets using range of collage materials. Experiments with blocks, colours and marks. Bake a birthday cake. Explore food from other cultures Make own Diva lamp from clay. Make presents for Spot using junk modelling Understands that they can use lines to enclose a space, and then begin to use these shapes to represent objects.	Build a bridge and Three Little Pig's houses Beginning to construct, stacking blocks vertically, horizontally, making enclosures, and creating spaces. Realises tools can be used for a purpose. Design and build houses for pigs. Design and create bridge from 3 billy goats. Joins construction pieces together to build and balance. Realise tools can be used for a purpose.	Constructs with a purpose in mind, using a variety of resources. Create space rockets, rocket packs and vehicles out of junk modelling Constructs with a purpose in mind, using a variety of resources. Boats and trains. Evaluate constructions.
<b>Reception</b>	Using junk modelling to create their own models of their homes and Mini me replicas Create lava lamp exploring which resources work best and why. Links with science.	Using big and small construction to enhance their creativity and imagination. Design and create own superhero capes and finger puppets. Combining fabrics for a specific purpose. Looking at garden vegetables linking to literacy cut up different vegetables safely.	Building transport using crates and blocks – linked to outdoor provision and resources. How to make things stable and strong. Design and create animal habitats which materials are best for specific purposes. Design, create and evaluate a floating boat. Choosing appropriate materials.
<b>Year1</b>	<p><b><u>Mechanical – Making a Moving Storybook (Kapow)</u></b> The children learn about the direction of movements and explore the mechanisms required to make these work by creating examples of side-to-side sliders and up-and-down sliders from templates</p> <p><b>Design</b> – purposeful, functional, appealing products for themselves and other users based on design criteria. <b>Make</b> – select from and use a range of tools and equipment to perform practical tasks, including construction materials. <b>Evaluate</b> – explore and evaluate a range of existing products. Evaluate their ideas against design criteria. <b>Technical Knowledge</b> – explore and use mechanisms in their products.</p>	<p><b><u>Food: Learn to distinguish between fruit and vegetables and where they grow. (Kapow)</u></b> Design a fruit and vegetable smoothie and accompanying packaging. (KAPOW)</p> <p><b>Food Technology</b> - use the basic principles of a healthy and varied diet to prepare dishes Cutting, washing. <b>Design</b> – purposeful, appealing product based on a design criteria. <b>Make</b> – select from a use a variety of equipment to perform practical tasks. Select from a use a range of ingredients. <b>Evaluate</b> –_the effectiveness of their recipe/ product against the design criteria.</p>	<p><b><u>Structure – Windmills (Kapow)</u></b> Identify and learn about the key features of a windmill, before designing and making a recycled-material windmill (structure).</p> <p><b>Design</b> – purposeful, functional, appealing products for themselves and other users based on design criteria. Generate ideas through talking, drawing and mock ups. <b>Make</b> – select from and use a range of tools and equipment to perform practical tasks, including construction materials according to their characteristics. <b>Evaluate</b> – explore and evaluate a range of existing products. Evaluate their ideas against design criteria. <b>Technical Knowledge</b> – build structures, exploring how they can be made stiffer, stronger and more stable.</p>
<b>Year2</b>	<p><b><u>Textiles: – Puppets (Kapow)</u></b> Explore methods of joining fabric. Design and make a character-based hand puppet using a preferred joining technique, before decorating.</p> <p><b>Design</b> – purposeful, functional, appealing products for themselves and other users based on design criteria. <b>Make</b> – select from and use a range of tools and equipment to perform practical tasks, including cutting, shaping and joining material. <b>Evaluate</b> - explore and evaluate a range of existing products. Evaluate their ideas against design criteria.</p>	<p><b><u>Mechanical: Fairground wheel (Kapow)</u></b> Understanding how wheels work and creating a design for a fairground wheel.</p> <p><b>Design</b> – purposeful, functional, appealing products for themselves and other users based on design criteria. Generate and model their ideas through talking, mock ups and research. <b>Make</b> – select from and use a range of tools and equipment to perform practical tasks, including construction materials. <b>Evaluate</b> - explore and evaluate a range of existing products. Evaluate their ideas against design criteria. <b>Technical Knowledge</b> – explore and use mechanisms in their products. Wheels and axles, making a moving train. Pivots, levers and linkages.</p>	<p><b><u>Food: A Balanced Diet (Kapow)</u></b> Learn about the food groups (carbohydrates, proteins, fruits and vegetables, dairy, oils and spreads) to understand a balanced diet to develop a healthy wrap.</p> <p><b>Food Technology</b> - use the basic principles of a healthy and varied diet to prepare dishes Cutting, washing. Understand where food comes from. Deciding ingredients and preparing. <b>Design</b> – purposeful, appealing product based on a design criteria. <b>Make</b> – select from a use a variety of equipment to perform practical tasks. Select from a use a range of ingredients. <b>Evaluate</b> - the effectiveness of their recipe/ product against the design criteria.</p>

<p><b>Year 3</b></p>	<p><b><u>Cooking and Nutrition: Eating seasonally (Kapow)</u></b> Cooking and nutrition unit including opportunities for children to learn about seasonal foods and create a seasonal food tart.</p> <p><b>Food technology</b> – Understanding that fruits and vegetables grow according to climate and season. Pick seasonal ingredients, follow a recipe, use tools and skills such as cutting and peeling. <b>Design</b> – purposeful, appealing product based on a design criteria. <b>Make</b> – select from a use a variety of equipment to perform practical tasks. Select from a use a range of ingredients. <b>Evaluate</b> - the effectiveness of their recipe/ product against the design criteria.</p>	<p><b><u>Textiles – Cross stitch and Applique (Kapow)- Link to History: Egyptians</u></b> Learn and apply two new sewing techniques – cross-stitch and appliqué. Utilise these new skills to design and make a cushion or Egyptian collar.</p> <p><b>Design</b> – Use research and develop design criteria to inform the design of functional appealing products that are fit for purpose. Develop ideas through annotated sketches and pattern pieces. <b>Make</b> – Select from and use a wider range of tools and equipment to perform practical tasks (cutting, joining, shaping) accurately. Select from and use a wide range of tools including textiles according to their aesthetic qualities. <b>Evaluate</b> - 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.</p>	<p><b><u>Electrical systems- Electrical poster (Kapow)- Link to History: Romans</u></b> Generating a design for an electric poster with consideration for the client’s needs and design criteria, planning the positioning of the bulb (circuit component) and its purpose.</p> <p><b>Design</b> – Understand the purpose of information design, Complete design criteria based on a client’s request. Roughly sketch four initial poster ideas, indicating where a bulb will be located for each. Review their initial ideas against the design criteria and peer feedback, developing a final design. <b>Make</b> – Assemble an electric poster, including a functional simple circuit with a bulb, following a demonstration. Test that the simple circuit works by adding a battery. <b>Evaluate</b> – Evaluate electric posters in a letter to a client. <b>Technical Knowledge</b> – 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.)</p>
<p><b>Year 4</b></p>	<p><b><u>Structures – Pavilions (Kapow)</u></b> Create a range of different shaped frame structures, make a variety of different frame structures and know what the structure (pavilion) is used for.</p> <p><b>Design</b> – Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, patterns and computer-aided design. <b>Make</b> – Select from and use a wider range of materials, and components, including construction materials, according to their functional properties and aesthetic qualities. <b>Evaluate</b> - 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.</p>	<p><b><u>Electrical - Torches (Kapow)</u></b> Identify the difference between electrical and electronic products. Evaluate a range of existing torches and their features, then develop a new functional torch design.</p> <p><b>Design</b> – Use research and develop design criteria to inform the design of functional appealing products that are fit for purpose. Develop ideas through annotated sketches and exploded diagrams. <b>Make</b> – Select from and use a wider range of tools and equipment to perform practical tasks (cutting, joining, shaping) accurately. Select from and use a wide range of tools and materials based on their functional properties. <b>Evaluate</b> - 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 have helped shape the world. <b>Technical Knowledge</b>- understand and use electrical systems in their products (series circuits incorporating bulbs)</p>	<p><b><u>Food – Adapting a Recipe (Kapow)</u></b> Cooking different breads – linked to evacuation Work in groups to adapt an existing bread recipe, whilst considering the cost of the ingredients and other expenses against a set budget.</p> <p><b>Food Technology</b> - use the basic principles of a healthy and varied diet to prepare dishes Cutting, washing. Understand where food comes from. Deciding ingredients and preparing. Use a range of cooking techniques. <b>Design</b> – Use research and develop design criteria to inform the design of functional appealing ingredients that are fit for purpose. Purposeful, appealing product based on a design criteria. <b>Make</b> – select from a use a variety of equipment to perform practical tasks. Select from a use a range of ingredients. <b>Evaluate</b> - 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.</p>
<p><b>Year 5</b></p>	<p><b><u>Food - What could be healthier? (Kapow)</u></b> Discover the farm to fork process, understand the key welfare issues for rearing cattle. Compare the nutritional value of existing sauces and develop a healthier recipe. (Spaghetti Bolognaise)</p> <p><b>Food Technology</b> - use the basic principles of a healthy and varied diet to prepare dishes Cutting, washing. Understand where food comes from. Deciding ingredients and preparing. Use a range of cooking techniques. Understand the source, seasonality and characteristics of a broad range of ingredients Know how to prepare a meal by collecting ingredients. <b>Design</b> – Use research and develop design criteria to inform the design of functional appealing ingredients that are fit for purpose. Purposeful, appealing product based on a design criteria. <b>Make</b> – select from a use a variety of equipment to perform practical tasks. Select from a use a range of ingredients.</p>	<p><b><u>Textiles – Stuffed Toy (Kapow)</u></b> Design a stuffed toy and make decisions on materials, decorations and attachments (appendages), after learning how to sew a blanket stitch. Linked to Literacy - Otto</p> <p><b>Design</b> – Use research and develop design criteria to inform the design of functional appealing products that are fit for purpose. Develop ideas through annotated sketches and pattern pieces. <b>Make</b> – Select from and use a wider range of tools and equipment to perform practical tasks (cutting, joining, shaping) accurately. Select from and use a wide range of tools including textiles according to their aesthetic qualities. <b>Evaluate</b> - 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.</p>	<p><b><u>Structure – Bridges (Kapow)</u></b> Test and analyse various types of bridge to determine their strength and stability. Explore material properties and sources, before marking, sawing and assembling a wooden truss bridge.</p> <p><b>Design</b> – Use research and develop design criteria to inform the design of functional appealing products that are fit for purpose. Develop ideas through annotated sketches and exploded diagrams. <b>Make</b> – Select from and use a wider range of tools and equipment to perform practical tasks (cutting, joining, shaping) accurately. Select from and use a wide range of tools including construction materials. <b>Evaluate</b> – Their ideas and products against their own design criteria and consider the views of others to improve their work. <b>Technical Knowledge</b> – Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.</p>

	<p><b>Evaluate</b> - 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.</p>		
<b>Year 6</b>	<p><b>Electrical systems – Steady hand game -Kapow</b>  <b>Understand what is meant by fit for purpose design and form follows function. Design and develop a steady hand game using a series circuit, including housing and backboard.</b></p> <p><b>Design</b> – Use research and develop design criteria to inform the design of functional appealing products that are fit for purpose. Develop ideas through annotated sketches and exploded diagrams.  <b>Make</b> – Select from and use a wider range of tools and equipment to perform practical tasks (cutting, joining, shaping) accurately. Select from and use a wide range of tools and materials based on their functional properties.  <b>Evaluate</b> - 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 (year 1 to test them)  <b>Technical Knowledge-</b> understand and use electrical systems in their products (series circuits incorporating bulbs, buzzers and motors)</p>	<p><b>Come dine with me – Kapow</b>  <b>Develop a three-course menu focused on three key ingredients, as part of a paired challenge to develop the best class recipes. Explore each key ingredient’s farm to fork process.</b></p> <p><b>Food Technology</b> - use the basic principles of a healthy and varied diet to prepare dishes Cutting, washing. Understand where food comes from. Deciding ingredients and preparing. Use a range of cooking techniques. Understand the source, seasonality and characteristics of a broad range of ingredients Know how to prepare a meal by collecting ingredients.  <b>Design</b> – Use research and develop design criteria to inform the design of functional appealing ingredients that are fit for purpose. Purposeful, appealing product based on a design criteria.  <b>Make</b> – select from a use a variety of equipment to perform practical tasks. Select from a use a range of ingredients.  <b>Evaluate</b> - 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.</p>	<p><b>Computing Programme – using CAD – Navigating the World -Kapow</b>  <b>Design and program a navigation tool to produce a multifunctional device for trekkers using CAD 3D modelling software. Pitch and explain the product to a guest panel.</b></p> <p><b>Design</b> – Use research and develop design criteria to inform the design of functional appealing products that are fit for purpose. Develop ideas through annotated sketches, exploded diagrams and Computer Aided Design.  <b>Make</b> – Place and manoeuvre 3D objects using computer-aided design. Change the properties of or combine one or more 3D objects using computer-aided design to produce a 3D CAD model.  <b>Evaluate</b> - 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. Give well-structured descriptions, explanations and narratives for different purposes, including for expressing feelings.  <b>Technical Knowledge-</b> apply their understanding of computing to programme, monitor and control their products.</p>
<b>Year</b>	<b>Autumn – Content: Food</b>	<b>Spring – Content: Textiles</b>	<b>Summer – Content: Resistant Materials</b>
<b>Year 7 Skills</b>	<p>Basic kitchen hygiene and safety  Preparing to cook – mise en place.  Basic knife handling – bridge and claw cut  Safe use of basic kitchen equipment – grating, chopping, slicing  Use of the cooker – hob/oven  Rubbing in method  Making a soft dough-Adding liquid to make a dough  Handling and shaping raw meat  Panneing – bread crumbing of chicken  Portion control</p>	<p>Hand stitch – threading a needle.  Machine stitch – different stitches and threading a machine.  Decoration – fabric pens/paints, sewing beads and buttons.  Template construction and cutting. Use to help shape and stitch.  Project – Willy Wonka inspired cushion.</p>	<p>Designing – Drawing skills.  CAD/CAM  Sustainable issues.  Hand tools and work shop equipment.  Working independently.  Health and Safety.  Materials and processes.  Cutting  Sanding  surface finishing  Shaping  Health and Safety in the workshop.  Woods  Sustainable issues.  Woods, metal and plastics.  Joining materials  Manipulating materials.</p>
<b>Knowledge</b>	<p>Understand and apply the principles of hygiene and safety.  Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet.  Learn a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]  Understand the source and characteristics of a broad range of ingredients.</p>	<p>Design-Make-Evaluation.  Health and safety in the Textiles studio and with equipment.  Fabric, fibres and Yarns. (Understand how they are made prior learning homework then expand in class)</p>	<p>Identify and solve their own design problems and understand how to reformulate problems given to them.  Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations.  Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.  Test, evaluate and refine their ideas and products against a specification, considering the views of intended users and other interested groups</p>

<p><b>Year 8 Skills</b></p>	<p>Understand and apply the <b>principles</b> of nutrition and health. Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet. Practice a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes.]</p>	<p>Further development – hand stitch and machine stitch (decorative stitches) Design own template, cut and use own design to construct 3D item. Decorating – fabric pens / paints. Finishing – high quality standard. Making felt cacti using appropriate skills.</p>	<p>Workshop equipment. Combining materials Gluing Service finishing Cutting, shaping Hand shaping tools. Research techniques. Research and analysis methods. Environmental issues. Finishing techniques. Veneers.</p>
<p><b>Knowledge</b></p>	<p>Understand the source, seasonality and characteristics of a broad range of ingredients Continued kitchen hygiene and safety Improved confidence and competence in skills and routines. Introduction to nutrition Function and sources of main nutrients Micro and macro nutrients Sensory evaluation of food products Use of the oven/hob Modification of meals/dishes Handling of raw meat or alternatives Continued demonstration of basic equipment including electric mixer</p>	<p>Design – Make – Evaluation Techniques – expanding on embroidery stitches, independent use of equipment and competence in stitching. Yarns – embroidery threads, cotton. Fibres and fabrics – Expanding knowledge of types and uses of fabrics. Looking at sustainable fabrics.</p>	<p>Use a variety of approaches for example, to generate creative ideas and avoid stereotypical responses. Identify and solve their own design problems and understand how to reformulate problems given to them. Use research and exploration, such as the study of different cultures, to identify and understand user needs. Select from and use a wider, more complex range of materials, components and ingredients, considering their properties.</p>
<p><b>Year 9 Skills</b></p>	<p>Demonstrate and consolidate food safety and hygiene Efficient use of time and resources. Comment upon the sources of food poisoning Types of contamination Signs and symptoms of food poisoning Cross contamination and how to prevent during food preparation. Important temperatures Enhanced practical skills and efficient use of kitchen equipment Shaping of dough Chilled desserts – layering of fillings</p>	<p>Use of different media to produce range of sketches that can transfer to screen and Styrofoam print. Explore the transfer of images using transfer glue and other mediums. Further develop range of hand stitch techniques and use of free hand machine stitch. Work to improve CAD/CAM skills to stitch into samples. Explore various ways of dyeing materials- natural dyeing techniques, cold/hot water dyeing and tie dye. Layer materials, transferred images, screen/Styrofoam print, hand and machine stitch to produce a mixed media, rustic feel to finished Seascape inspired sample booklet. Evaluation.</p>	<p>Annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools. Select from and use a wider, more complex range of materials, components and ingredients, considering their properties Working with wood Combining materials Environmental concerns Storage box, Wood joints, Glues. Combining materials Consider function of products Manufacturing processes. Housings. Wood Joints</p>
<p><b>Knowledge</b></p>	<p>Understand and apply the principles of nutrition and health Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes] Understand the source, seasonality and characteristics of a broad range of ingredients. Comment upon the sources of food poisoning Types of contamination Signs and symptoms of food poisoning Cross contamination and how to prevent Important temperatures.</p>	<p>Properties of and working characteristics of different fabrics and fibres. Fabrics and materials from different countries and cultures.</p>	<p>Test, evaluate and refine their ideas and products against a specification, considering the views of intended users and other interested groups.  Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.</p>

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