

*DT progression of skills Kapow*

Structures

		EYFS (Reception)	
		<u>Junk modelling</u>	<u>Boats</u>
Skills	Design	<ul style="list-style-type: none"> <li>• Making verbal plans and material choices.</li> <li>• Developing a junk model.</li> </ul>	<ul style="list-style-type: none"> <li>• Designing a junk model boat.</li> <li>• Using knowledge from exploration to inform design.</li> </ul>
	Make	<ul style="list-style-type: none"> <li>• Improving fine motor/scissor skills with a variety of materials.</li> <li>• Joining materials in a variety of ways (temporary and permanent).</li> <li>• Joining different materials together.</li> <li>• Describing their junk model, and how they intend to put it together.</li> </ul>	<ul style="list-style-type: none"> <li>• Making a boat that floats and is waterproof, considering material choices.</li> </ul>
	Evaluate	<ul style="list-style-type: none"> <li>• Giving a verbal evaluation of their own and others' junk models with adult support.</li> <li>• Checking to see if their model matches their plan.</li> <li>• Considering what they would do differently if they were to do it again.</li> <li>• Describing their favourite and least favourite part of their model.</li> </ul>	<ul style="list-style-type: none"> <li>• Making predictions about, and evaluating different materials to see if they are waterproof.</li> <li>• Making predictions about, and evaluating existing boats to see which floats best.</li> <li>• Testing their design and reflecting on what could have been done differently.</li> <li>• Investigating the how the shapes and structure of a boat affect the way it moves.</li> </ul>
Knowledge	Technical	<ul style="list-style-type: none"> <li>• To know there are a range to different materials that can be used to make a model and that they are all slightly different.</li> <li>• Making simple suggestions to fix their junk model.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that 'waterproof' materials are those which do not absorb water.</li> </ul>
	Additional		<ul style="list-style-type: none"> <li>• To know that some objects float and others sink.</li> <li>• To know the different parts of a boat.</li> </ul>

		Year 1	Year 2
		<u>Constructing a windmill</u>	<u>Baby bear's chair</u>
Skills	Design	<ul style="list-style-type: none"> <li>• Learning the importance of a clear design criteria.</li> <li>• Including individual preferences and requirements in a design.</li> </ul>	<ul style="list-style-type: none"> <li>• Generating and communicating ideas using sketching and modelling.</li> <li>• Learning about different types of structures, found in the natural world and in everyday objects.</li> </ul>
	Make	<ul style="list-style-type: none"> <li>• Making stable structures from card, tape and glue .</li> <li>• Learning how to turn 2D nets into 3D structures.</li> <li>• Following instructions to cut and assemble the supporting structure of a windmill.</li> <li>• Making functioning turbines and axles which are assembled into a main supporting structure.</li> </ul>	<ul style="list-style-type: none"> <li>• Making a structure according to design criteria.</li> <li>• Creating joints and structures from paper/card and tape.</li> <li>• Building a strong and stiff structure by folding paper.</li> </ul>
	Evaluate	<ul style="list-style-type: none"> <li>• Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't.</li> <li>• Suggest points for improvements.</li> </ul>	<ul style="list-style-type: none"> <li>• Exploring the features of structures.</li> <li>• Comparing the stability of different shapes.</li> <li>• Testing the strength of own structures.</li> <li>• Identifying the weakest part of a structure.</li> <li>• Evaluating the strength, stiffness and stability of own structure.</li> </ul>
Knowledge	Technical	<ul style="list-style-type: none"> <li>• To understand that the shape of materials can be changed to improve the strength and stiffness of structures.</li> <li>• To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses).</li> <li>• To understand that axles are used in structures and mechanisms to make parts turn in a circle.</li> <li>• To begin to understand that different structures are used for different purposes.</li> <li>• To know that a structure is something that has been made and put together.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that shapes and structures with wide, flat bases or legs are the most stable.</li> <li>• To understand that the shape of a structure affects its strength.</li> <li>• To know that materials can be manipulated to improve strength and stiffness.</li> <li>• To know that a structure is something which has been formed or made from parts.</li> <li>• To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move.</li> <li>• To know that a 'strong' structure is one which does not break easily.</li> <li>• To know that a 'stiff' structure or material is one which does not bend easily.</li> </ul>
	Additional	<ul style="list-style-type: none"> <li>• To know that a client is the person I am designing for.</li> <li>• To know that design criteria is a list of points to ensure the product meets the clients needs and wants.</li> <li>• To know that a windmill harnesses the power of wind for a purpose like grinding grain, pumping water or generating electricity.</li> <li>• To know that windmill turbines use wind to turn and make the machines inside work.</li> <li>• To know that a windmill is a structure with sails that are moved by the wind.</li> <li>• To know the three main parts of a windmill are the turbine, axle and structure.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that natural structures are those found in nature.</li> <li>• To know that man-made structures are those made by people.</li> </ul>

# Mechanisms

		Year 1		Year 2	
		<u>Making a moving storybook</u>		<u>Fairground wheel</u>	<u>Making a moving monster</u>
Skills	Design	<ul style="list-style-type: none"> <li>Explaining how to adapt mechanisms, using bridges or guides to control the movement.</li> <li>Designing a moving story book for a given audience.</li> </ul>		<ul style="list-style-type: none"> <li>Selecting a suitable linkage system to produce the desired motion.</li> <li>Designing a wheel.</li> </ul>	<ul style="list-style-type: none"> <li>Creating a class design criteria for a moving monster.</li> <li>Designing a moving monster for a specific audience in accordance with a design criteria.</li> </ul>
	Make	<ul style="list-style-type: none"> <li>Following a design to create moving models that use levers and sliders.</li> </ul>		<ul style="list-style-type: none"> <li>Selecting materials according to their characteristics.</li> <li>Following a design brief.</li> </ul>	<ul style="list-style-type: none"> <li>Making linkages using card for levers and split pins for pivots.</li> <li>Experimenting with linkages adjusting the widths, lengths and thicknesses of card used.</li> <li>Cutting and assembling components neatly.</li> </ul>
	Evaluate	<ul style="list-style-type: none"> <li>Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.</li> <li>Reviewing the success of a product by testing it with its intended audience.</li> </ul>		<ul style="list-style-type: none"> <li>Evaluating different designs.</li> <li>Testing and adapting a design.</li> </ul>	<ul style="list-style-type: none"> <li>Evaluating own designs against design criteria.</li> <li>Using peer feedback to modify a final design.</li> </ul>
Knowledge	Technical	<ul style="list-style-type: none"> <li>To know that a mechanism is the parts of an object that move together.</li> <li>To know that a slider mechanism moves an object from side to side.</li> <li>To know that a slider mechanism has a slider, slots, guides and an object.</li> <li>To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.</li> </ul>		<ul style="list-style-type: none"> <li>To know that different materials have different properties and are therefore suitable for different uses.</li> </ul>	<ul style="list-style-type: none"> <li>To know that mechanisms are a collection of moving parts that work together as a machine to produce movement.</li> <li>To know that there is always an input and output in a mechanism.</li> <li>To know that an input is the energy that is used to start something working.</li> <li>To know that an output is the movement that happens as a result of the input.</li> <li>To know that a lever is something that turns on a pivot.</li> <li>To know that a linkage mechanism is made up of a series of levers.</li> </ul>
	Additional	<ul style="list-style-type: none"> <li>To know that in Design and technology we call a plan a 'design'.</li> </ul>		<ul style="list-style-type: none"> <li>To know the features of a ferris wheel include the wheel, frame, pods, a base an axle and an axle holder.</li> <li>To know that it is important to test my design as I go along so that I can solve any problems that may occur.</li> </ul>	<ul style="list-style-type: none"> <li>To know some real-life objects that contain mechanisms.</li> </ul>

Food

		EYFS (Reception)	Year 1	Year 2
		<u>Soup</u>	<u>Fruit and vegetables</u>	<u>A balanced diet</u>
Skills	Design		<ul style="list-style-type: none"> <li>• Designing smoothie carton packaging by-hand or on ICT software.</li> </ul>	<ul style="list-style-type: none"> <li>• Designing a healthy wrap based on a food combination which work well together.</li> </ul>
	Make		<ul style="list-style-type: none"> <li>• Chopping fruit and vegetables safely to make a smoothie.</li> </ul>	<ul style="list-style-type: none"> <li>• Slicing food safely using the bridge or claw grip.</li> <li>• Constructing a wrap that meets a design brief.</li> </ul>
	Evaluate		<ul style="list-style-type: none"> <li>• Tasting and evaluating different food combinations.</li> <li>• Describing appearance, smell and taste.</li> <li>• Suggesting information to be included on packaging.</li> </ul>	<ul style="list-style-type: none"> <li>• Describing the taste, texture and smell of fruit and vegetables.</li> <li>• Taste testing food combinations and final products.</li> <li>• Describing the information that should be included on a label.</li> <li>• Evaluating which grip was most effective.</li> </ul>
Knowledge	Cooking and nutrition		<ul style="list-style-type: none"> <li>• Understanding the difference between fruits and vegetables.</li> <li>• To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber).</li> <li>• To know that a blender is a machine which mixes ingredients together into a smooth liquid.</li> <li>• To know that a fruit has seeds and a vegetable does not.</li> <li>• To know that fruits grow on trees or vines.</li> <li>• To know that vegetables can grow either above or below ground.</li> <li>• To know that vegetables can come from different parts of the plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber).</li> </ul>	<ul style="list-style-type: none"> <li>• To know that 'diet' means the food and drink that a person or animal usually eats.</li> <li>• To understand what makes a balanced diet.</li> <li>• To know where to find the nutritional information on packaging.</li> <li>• To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar.</li> <li>• To understand that I should eat a range of different foods from each food group, and roughly how much of each food group.</li> <li>• To know that nutrients are substances in food that all living things need to make energy, grow and develop.</li> <li>• To know that 'ingredients' means the items in a mixture or recipe.</li> <li>• To know that I should only have a maximum of five teaspoons of sugar a day to stay healthy.</li> <li>• To know that many food and drinks we do not expect to contain sugar do; we call these 'hidden sugars'.</li> </ul>

		EYFS: Reception	Year 1	Year 2
		<u>Bookmarks</u>	<u>Puppets</u>	<u>Pouches</u>
Skills	Design	<ul style="list-style-type: none"> <li>• Discussing what a good design needs.</li> <li>• Designing a simple pattern with paper.</li> <li>• Designing a bookmark.</li> <li>• Choosing from available materials.</li> </ul>	<ul style="list-style-type: none"> <li>• Using a template to create a design for a puppet.</li> </ul>	
	Make	<ul style="list-style-type: none"> <li>• Developing fine motor/cutting skills with scissors.</li> <li>• Exploring fine motor/threading and weaving (under, over technique) with a variety of materials.</li> <li>• Using a prepared needle and wool to practise threading.</li> </ul>	<ul style="list-style-type: none"> <li>• Cutting fabric neatly with scissors.</li> <li>• Using joining methods to decorate a puppet.</li> <li>• Sequencing steps for construction.</li> </ul>	
	Evaluate	<ul style="list-style-type: none"> <li>• Reflecting on a finished product and comparing to their design.</li> </ul>	<ul style="list-style-type: none"> <li>• Reflecting on a finished product, explaining likes and dislikes.</li> </ul>	
Knowledge		<ul style="list-style-type: none"> <li>• To know that a design is a way of planning our idea before we start.</li> <li>• To know that threading is putting one material through an object.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that 'joining technique' means connecting two pieces of material together.</li> <li>• To know that there are various temporary methods of joining fabric by using staples, glue or pins.</li> <li>• To understand that different techniques for joining materials can be used for different purposes.</li> <li>• To understand that a template (or fabric pattern) is used to cut out the same shape multiple times.</li> <li>• To know that drawing a design idea is useful to see how an idea will look.</li> </ul>	