



# Meadowhead Juniors

## Knowledge Overview - DT



KS2	Disciplinary knowledge		Substantive knowledge	
<u>Year 3</u> <b>Main Focus: Food</b>  <b>Food from another European country</b>  <b>Enquiry Question:</b> How can make a traditional dish from Greece?	<b>D</b>	<ul style="list-style-type: none"> <li>- Research a traditional dish from a different country</li> <li>- Create and follow a recipe from Greece</li> </ul>	<b>D</b>	
	<b>M</b>	<ul style="list-style-type: none"> <li>- Knowing how to prepare themselves and a workspace to cook safely.</li> <li>- Following instructions with a recipe</li> <li>- Understand what contamination means</li> </ul>	<b>M</b>	<ul style="list-style-type: none"> <li>- To be able to use a cooking equipment. Knives, bowls, mixing, baking, cooking pans</li> <li>- To be able to measure food products.</li> <li>- Work to a given timescale</li> </ul>
	<b>E</b>	<ul style="list-style-type: none"> <li>- Suggest improvements on how to make the recipe different</li> <li>- Evaluating what you liked and what you didn't like</li> </ul>	<b>E</b>	
<b><u>Technical</u></b>	<ul style="list-style-type: none"> <li>- To know about the different food groups and name food from each group - protein, carbohydrate, fats, sugars</li> <li>- To know that different countries have their own traditional dishes</li> <li>- To know</li> <li>- To understand that food must be grown, farmed, or caught in Europe and the wider world</li> <li>- To know about a wider variety of ingredients and techniques to prepare and combine ingredients safely</li> <li>- To know what makes a healthy and balanced diet, and that different foods and drinks provide different substances the body needs to be healthy and active</li> <li>- To understand seasonality and the advantages of eating seasonal and locally produced food</li> <li>- To read and follow recipes which involve several processes, skills and techniques</li> </ul>			
<b>Main Focus: Textiles</b>  <b>Seasonal Sewing (running &amp; back stitch)</b>  <b>Enquiry Question:</b> What stitching techniques are used to	<b>D</b>	<ul style="list-style-type: none"> <li>- Designing and making a template from an existing cushion and applying individual design criteria</li> </ul>	<b>D</b>	
	<b>M</b>	<ul style="list-style-type: none"> <li>- Following a design criteria to create a hanging decoration</li> <li>- Selecting and cutting fabrics with ease using fabric scissors</li> <li>- Threading needles with greater independence</li> </ul>	<b>M</b>	<ul style="list-style-type: none"> <li>- To be able to learn and use the running and back stitch of sewing</li> <li>- To use scissors independently and appropriately</li> </ul>

create a hanging decorations?		<ul style="list-style-type: none"> <li>- Running &amp; Back stich</li> <li>- Decorating fabric using applique</li> <li>- Completing and designing ideas</li> </ul>	
	E	<ul style="list-style-type: none"> <li>- Evaluating an end product and thinking of other ways in which to create similar items</li> </ul>	E
<b>Technical</b>		<ul style="list-style-type: none"> <li>- To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces</li> <li>- To know that when two edges of fabric have been joined together it is called a seam</li> <li>- To know that it is important to leave space on the fabric for the seam</li> <li>- To understand that some products are turned inside out after sewing so the stitching is hidden</li> <li>- To know that creating a prototype of their design is useful for checking ideas and proportions</li> </ul>	
<b>Main Focus:</b> Mechanisms and Structures  <b>Pop-up Books</b>  <b>Enquiry Question:</b> How can you use levers and linkages to make a pop-up book?	D	<ul style="list-style-type: none"> <li>- Design a pop up book which uses a mixture of structures and mechanism</li> <li>- Name each mechanism input and output</li> <li>- Storyboarding ideas</li> </ul>	D
	M	<ul style="list-style-type: none"> <li>- Following a design brief to make a popup book</li> <li>- Making mechanisms and structures using sliders, pivot and fold to produce movement</li> <li>- Use layers and spaces to hide the moving parts</li> </ul>	M
	E	<ul style="list-style-type: none"> <li>- Evaluate the work of others and receiving feedback on own work</li> <li>- Suggestion points for improvement</li> </ul>	E
<b>Technical</b>		<ul style="list-style-type: none"> <li>-To know that mechanisms control movement.</li> <li>-To understand that mechanisms can be used to change one kind of motion into another.</li> <li>-To understand how to use sliders, pivots and folds to create paper-based mechanisms.</li> <li>-To know that a design brief is a description of what I am going to design and make.</li> <li>-To know that designers often want to hide mechanisms to make a product more aesthetically pleasing.</li> <li>- To Design a pop-up book which uses a mixture of structures and mechanisms.</li> <li>- To Name each mechanism, input and output accurately.</li> <li>- To Storyboarding ideas for a book.</li> <li>- To Follow a design brief to make a pop up book, neatly and with focus on accuracy.</li> <li>-To Make mechanisms and/or structures using sliders, pivots and folds to produce movement.</li> <li>-To Use layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result.</li> </ul>	

		-To Evaluate the work of others and receiving feedback on own work. Suggesting points for improvement.	
<b>Year 4</b> <b>Main Focus:</b> Mechanisms and Structures  <b>Chocolate Container</b>  <b>Enquiry Question:</b> How can you create a sustainable structure?	D	<ul style="list-style-type: none"> <li>- Design a chocolate box which uses a mixture of structures</li> <li>- Name each structure</li> <li>- Storyboarding ideas</li> </ul>	D
	M	<ul style="list-style-type: none"> <li>- Following a design brief to make chocolate container.</li> <li>- Making different structures</li> </ul>	M
	E	<ul style="list-style-type: none"> <li>- Evaluate the work of others and receiving feedback on own work</li> <li>- Suggestion points for improvement</li> </ul>	E
<b>Technical</b>		<ul style="list-style-type: none"> <li>- Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect.</li> <li>- Building frame structures designed to support weight.</li> <li>- Creating a range of different shaped frame structures.</li> <li>- Making a variety of free-standing frame structures of different shapes and sizes.</li> <li>- Selecting appropriate materials to build a strong structure and for the cladding.</li> <li>- Reinforcing corners to strengthen a structure.</li> <li>- Creating a design in accordance with a plan.</li> <li>- Learning to create different textural effects with materials.</li> <li>- To understand what a frame structure is.</li> <li>- To know that a 'free-standing' structure is one that can stand on its own.</li> <li>- To know that a pavilion is a decorative building or structure for leisure activities.</li> <li>- To know that cladding can be applied to structures for different effects.</li> <li>- To know that aesthetics are how a product looks.</li> </ul>	
<b>Main Focus:</b> Electrical systems / monitoring control & programming  <b>Personalised light up box</b>  <b>Enquiry Question:</b> What goes in to making a light up sign?	D	<ul style="list-style-type: none"> <li>- Design a personalised light up box book which uses a mixture of structures and mechanism</li> <li>- Name each mechanism input and output</li> <li>- Storyboarding ideas</li> </ul>	D
	M	<ul style="list-style-type: none"> <li>- Following a design brief to make a personalised light up</li> <li>- Making mechanisms and structures using sliders, pivot and fold to produce movement</li> </ul>	M
		<ul style="list-style-type: none"> <li>- To build a circuit using a bulb, battery, battery holder and crocodile wire to build simple circuits.</li> </ul>	

		<ul style="list-style-type: none"> <li>- Use layers and spaces to hide the moving parts</li> </ul>		
	<b>E</b>	<ul style="list-style-type: none"> <li>- Evaluate the work of others and receiving feedback on own work</li> <li>- Suggestion points for improvement</li> </ul>	<b>E</b>	
<b><u>Technical</u></b>	<ul style="list-style-type: none"> <li>- To understand that an electrical system is a group of parts (components) that work together to transport electricity around a circuit.</li> <li>- To understand common features of an electric product (switch, battery or plug, dials, buttons etc.)</li> <li>- To list examples of common electric products (kettle, remote control etc.)</li> <li>- To understand that an electric product uses an electrical system to work (function).</li> <li>- To know the name and appearance of a bulb, battery, battery holder and crocodile wire to build simple circuits.</li> <li>- Carrying out research based on a given topic to develop a range of initial ideas.</li> <li>- Generating a final design for the electric poster with consideration for the client's needs and design criteria.</li> <li>- Planning the positioning of the bulb (circuit component) and its purpose.</li> <li>- Mounting the poster onto corrugated card to improve its strength and withstand the weight of the circuit on the rear.</li> <li>- Measuring and marking materials out using a template or ruler.</li> <li>- Fitting an electrical component (bulb).</li> <li>- Learning ways to give the final product a higher quality finish (e.g. framing to conceal a roughly cut edge).</li> <li>- Learning to give and accept constructive criticism on own work and the work of others.</li> <li>- Testing the success of initial ideas against the design criteria and justifying opinions.</li> <li>- Revisiting the requirements of the client to review developing design ideas and check that they fulfil their needs.</li> </ul>			
<b>Main Focus: Food</b>  <b>Eating Seasonality</b>  <b>Enquiry Question:</b> What food dishes can you make in winter using the vegetables from that season?	<b>D</b>	<ul style="list-style-type: none"> <li>- Creating a health and nutritious recipe for a soup and bread roll using ingredients, considering the taste, texture, smells, and appearance.</li> <li>- Using a budget to create the recipe</li> </ul>	<b>D</b>	
	<b>M</b>	<ul style="list-style-type: none"> <li>- Knowing how to prepare themselves and a workspace to cook safely, learning basic rules of food contamination.</li> <li>- Following instructions with a recipe</li> </ul>	<b>M</b>	<ul style="list-style-type: none"> <li>- To be able to use a cooking equipment. Knives, bowls, mixing, baking, cooking pans, blender,</li> <li>- To be able to measure food products.</li> <li>- Work to a given timescale</li> </ul>

	E	<ul style="list-style-type: none"> <li>- Establishing using a design criterion to help test and review dishes.</li> <li>- Suggestions points on how to improve.</li> <li>- What impact do using these seasonal vegetables have on the environment</li> </ul>	E	
<b>Technical</b>		<ul style="list-style-type: none"> <li>- To know that not all fruits and vegetables can be grown in the UK.</li> <li>- To know climate can affect foods growth.</li> <li>- To know that vegetables and fruit grown in certain seasons.</li> <li>- To know that cooking instructions are known as a recipe.</li> <li>- To know that imported and exported food can come and go from our country.</li> <li>- To understand the importance of how food travels and the negative impact it has on our environment.</li> <li>- To know that each fruit and vegetable gives us nutritional benefits because they contain minerals, vitamins, and fibre.</li> <li>- To understand that vitamins, minerals, and fibre are important to energy, growth and maintaining health.</li> <li>- To know the safety rules using, storing, cleaning and a knife safety</li> <li>- To know that similar coloured fruits and vegetables often have similar nutritional benefits</li> </ul>		
<p><b>Year 5</b>  <b>Main Focus: Food</b>  <b>Healthy stir fry</b>  <b>Enquiry Question:</b>  How can we make a healthy stir fry while comparing it process foods?</p>	D	<ul style="list-style-type: none"> <li>- Creating a health and nutritious recipe for a stir fry considering the taste, texture, smells, and appearance.</li> <li>- Using a budget to create the recipe</li> </ul>	D	
	M	<ul style="list-style-type: none"> <li>- Knowing how to prepare themselves and a workspace to cook safely, learning basic rules of food contamination.</li> <li>- Following instructions with a recipe</li> </ul>	M	<ul style="list-style-type: none"> <li>- To be able to use a cooking equipment. Knives, bowls, mixing, baking, cooking pans, blender,</li> <li>- To be able to measure food products.</li> <li>- Work to a given timescale</li> </ul>
	E	<ul style="list-style-type: none"> <li>- Establishing using a design criterion to help test and review dishes.</li> <li>- Suggestions points on how to improve.</li> <li>- What impact do using these seasonal ingredients have on the environment</li> </ul>	E	
<b>Technical</b>		<ul style="list-style-type: none"> <li>- To know the main food groups and the different nutrients that are important for health. - protein, fats, carbohydrates, sugars, unsaturated fats, fibre, vitamins, minerals.</li> <li>- To know how a variety of ingredients are reared, caught, and processed to make them safe and palatable/tasty to eat.</li> <li>- To select appropriate ingredients and use a wide range of techniques to combine them.</li> </ul>		

		<ul style="list-style-type: none"> <li>- To research into existing products, and market research to inform the design of an innovative product.</li> <li>- To produce a step-by-step plan to guide making, demonstrating the application of knowledge of different foods, tools, and techniques</li> <li>- To produce detailed evaluations about existing products and their own considering the views of others to improve their product</li> </ul>	
<b>Main Focus:</b> Textiles (variety of stitches)  <b>Bag design - Yinka Iori and Anya Hindmarch</b>  <b>Enquiry Question:</b> How can we make a reusable bag from recycled materials?	<b>D</b>	<ul style="list-style-type: none"> <li>- Designing a re-useable recycled bag</li> <li>- Considering the proportions of the individual components</li> <li>- Consider materials that you're going to use</li> </ul>	<b>D</b>
	<b>M</b>	<ul style="list-style-type: none"> <li>- Measuring, marking, and cutting fabric accurately and independently</li> <li>- Creatin strong and secure stitches when joining two fabrics together.</li> <li>- Threading needles independently</li> <li>- Using applique to attach piece of fabric together.</li> <li>- Sewing a handle on to the bag using different stitching techniques</li> </ul>	<b>M</b>
	<b>E</b>	<ul style="list-style-type: none"> <li>- Testing and evaluating a product and giving point for further improvements</li> </ul>	<b>E</b>
<b><u>Technical</u></b>		<ul style="list-style-type: none"> <li>- To know that it is important to design a bag for the client or targeted customer in mind</li> <li>- To know that this bag is sustainable to the planet that we live in</li> <li>- To know which stitch technique is important to use</li> <li>- To know the small, neat stiches which are pulled taut are important to ensure that the bag is strong and sustainable</li> <li>- To know that a bag should be finished to a high standard</li> <li>- To understand the world wide issues of recycling and how we can continue to protect our planet.</li> </ul>	
<b>Main Focus:</b> Mechanisms and Structures  <b>Tower Bridge</b>  <b>Enquiry Question:</b> Why does a bridge not collapse?	<b>D</b>	<ul style="list-style-type: none"> <li>- Designing a stable structure that is able to support weight.</li> </ul>	<b>D</b>
	<b>M</b>	<ul style="list-style-type: none"> <li>- Designing a stable structure that is able to support weight.</li> <li>-</li> </ul>	<b>M</b>
			<ul style="list-style-type: none"> <li>- Creating a frame structure with focus on triangulation.</li> <li>- Making a range of different shaped beam bridges.</li> <li>- Using triangles to create truss bridges that span a given distance and support a load.</li> </ul>



				<ul style="list-style-type: none"> <li>- Building a wooden bridge structure.</li> <li>- Independently measuring and marking wood accurately.</li> </ul>
	E	<ul style="list-style-type: none"> <li>- Testing and evaluating a product and giving point for further improvements</li> </ul>	E	
<b>Technical</b>	<ul style="list-style-type: none"> <li>- To understand some different ways to reinforce structures.</li> <li>- To understand how triangles can be used to reinforce bridges.</li> <li>- -To know that properties are words that describe the form and function of materials.</li> <li>- To understand why material selection is important based on their properties.</li> <li>- To understand the material (functional and aesthetic) properties of wood.</li> <li>- Designing a stable structure that is able to support weight.</li> <li>- Creating a frame structure with focus on triangulation.</li> <li>- Making a range of different shaped beam bridges.</li> <li>- Using triangles to create truss bridges that span a given distance and support a load.</li> <li>- Building a wooden bridge structure.</li> <li>- Independently measuring and marking wood accurately.</li> <li>- Selecting appropriate tools and equipment for particular tasks.</li> <li>- Using the correct techniques to saw safely.</li> <li>- Identifying where a structure needs reinforcement and using card corners for support.</li> <li>- Explaining why selecting appropriate materials is an important part of the design process.</li> <li>- Understanding basic wood functional properties.</li> <li>- Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary.</li> <li>-</li> <li>- Suggesting points for improvements for own bridges and those designed by others.</li> </ul>			
<b>Year 6</b> <b>Main Focus:</b> Electrical systems / monitoring control & programming	D	<ul style="list-style-type: none"> <li>- Design a fairground ride which uses a mixture of structures and mechanism.</li> <li>- Name each mechanism input and output.</li> <li>- Storyboarding ideas</li> </ul>	D	
<b>Fairground ride - Playmobil character</b>  <b>Enquiry Question:</b> How can we create our own moving fairground ride?	M	<ul style="list-style-type: none"> <li>- Following a design brief to make a fairground ride.</li> <li>- Making mechanisms and structures</li> <li>- Use layers and spaces to hide the moving parts</li> </ul>	M	<ul style="list-style-type: none"> <li>- Building a range of play apparatus structures drawing upon new and prior knowledge of structures.</li> <li>- Measuring, marking to create a range of structures.</li> <li>- Using a range of materials to reinforce and add decoration to structures.</li> </ul>

	<b>E</b>	<ul style="list-style-type: none"> <li>- Evaluate the work of others and receiving feedback on own work.</li> <li>- Suggestion points for improvement</li> </ul>	<b>E</b>	
<b><u>Technical</u></b>	<ul style="list-style-type: none"> <li>- Designing a playground featuring a variety of different structures, considering how the structures will be used.</li> <li>- Considering effective and ineffective designs.</li> <li>- Building a range of play apparatus structures drawing upon new and prior knowledge of structures.</li> <li>- Measuring, marking to create a range of structures.</li> <li>- Using a range of materials to reinforce and add decoration to structures.</li> <li>- Improving a design plan based on peer evaluation.</li> <li>- Testing and adapting a design to improve it as it is developed.</li> <li>- Identifying what makes a successful structure.</li> <li>- To know that structures can be strengthened by manipulating materials and shapes.</li> <li>- To understand what a 'footprint plan' is.</li> <li>- To understand that in the real world, design can impact users in positive and negative ways.</li> <li>- To know that a prototype is a cheap model to test a design idea</li> </ul>			
<p><b>Main Focus:</b> Mechanisms and Structures</p> <p><b>Bird Boxes</b></p> <p><b>Enquiry Question:</b> How can I make a bird box using wood?</p>	<b>D</b>	<ul style="list-style-type: none"> <li>- Design a bird box which uses a mixture of structures</li> <li>- Name each mechanism input and output.</li> <li>- Storyboarding ideas</li> </ul>	<b>D</b>	
	<b>M</b>	<ul style="list-style-type: none"> <li>- Following a design brief to make a bird box.</li> <li>- Making structures</li> <li>- Use layers and spaces to hide the moving parts</li> </ul>	<b>M</b>	<ul style="list-style-type: none"> <li>- measure, clamp, saw, sand and join wood.</li> <li>- use a hand drill to drill a hole in a piece of wood.</li> <li>- the safety rules I need to follow when doing woodworking.</li> </ul>
	<b>E</b>	<ul style="list-style-type: none"> <li>- Evaluate the work of others and receiving feedback on own work.</li> <li>- Suggestion points for improvement</li> </ul>	<b>E</b>	
<b><u>Technical</u></b>	<ul style="list-style-type: none"> <li>- can investigate the appearance and function of a variety of different bird houses.</li> <li>- identify what materials have been used to construct a variety of bird houses and - suggest how the parts have been joined together</li> <li>- what a flat pack diagram is and can use it to identify each part of a structure.</li> <li>- create a flat pack diagram of a constructed bird house.</li> <li>- draw an exploded diagram.</li> <li>- identify the tools associated with basic woodworking.</li> <li>- measure, clamp, saw, sand and join wood.</li> <li>- use a hand drill to drill a hole in a piece of wood.</li> <li>- the safety rules I need to follow when doing woodworking.</li> <li>- design a bird house for a particular bird, taking into account the bird's needs.</li> </ul>			



	<ul style="list-style-type: none"> <li>- select appropriate tools and materials to use when making a bird house.</li> <li>- create a sturdy bird house frame using wood.</li> <li>- evaluate my finished bird house, taking into account the views of others to improve my work.</li> <li>- use observation to evaluate the effectiveness of my bird house.</li> </ul>		
<p><b>Main Focus:</b> Food</p> <p><b>Multi-cultural food/audience/dietary need menu</b></p> <p><b>Enquiry Question:</b> What ingredients go into a traditional curry?</p>	<b>D</b>	<ul style="list-style-type: none"> <li>- Writing a recipe, explaining the key steps, method, and ingredients</li> <li>- Including fact and drawings from research undertaken</li> </ul>	<b>D</b>
	<b>M</b>	<ul style="list-style-type: none"> <li>-Following a recipe, including using the correct quantities of each ingredient</li> <li>-Adapting a recipe based on research</li> <li>-Working to a given timescale</li> <li>-Working safely and hygienically with independence</li> </ul>	<b>M</b>
	<b>E</b>	<ul style="list-style-type: none"> <li>-Evaluating a recipe, considering: Taste, smell, texture, and origin of the food group</li> <li>-Taste testing and scoring final product</li> <li>-Suggesting and writing up points of improvement when scoring other dishes and when evaluating their own throughout the planning, preparation, and cooking process</li> <li>-Evaluating health and safety in production to minimise cross contamination</li> </ul>	<b>E</b>
<b><u>Technical</u></b>	<ul style="list-style-type: none"> <li>-To know how to flavour food and know that's how it tastes.</li> <li>-To know that countries have national dishes which are recipes associated to that country</li> <li>-To understand that it is important to wash fruit and vegetables before eating to remove and dirt and insecticides</li> <li>-To understand what happens to a certain good before it appears on the supermarket shelf.</li> <li>- To be able to understand the audience that you're cooking for</li> <li>-To know the different dietary requirements - diabetes, celiac, lactose intolerance, vegan, halal</li> </ul>		