



St Mary's Catholic Junior School

Year 3



Design & Technology Long Term Plan

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Food: eating seasonally		Mechanical systems: pneumatic toys		Structures: Constructing a castle/landmark

Design	Make	Evaluate	Technical Knowledge
<p><u>Food</u> Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish</p> <p><u>Mechanical Systems</u> Designing a toy which uses a pneumatic system Developing design criteria from a design brief Generating ideas using thumbnail sketches and exploded diagrams Learning that different types of drawings are used in design to explain ideas clearly</p> <p><u>Structures</u> Designing a castle with key features to appeal to a specific person/purpose</p>	<p><u>Food</u> Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish</p> <p><u>Mechanical Systems</u> Designing a toy which uses a pneumatic system Developing design criteria from a design brief Generating ideas using thumbnail sketches and exploded diagrams Learning that different types of drawings are used in design to explain ideas clearly</p> <p><u>Electrical Systems</u> Designing a game that works using static electricity, including the instructions for playing the game</p>	<p><u>Food</u> Establishing and using design criteria to help test and review dishes Describing the benefits of seasonal fruits and vegetables and the impact on the environment Suggesting points for improvement when making a seasonal tart</p> <p><u>Mechanical Systems</u> Using the views of others to improve designs Testing and modifying the outcome, suggesting improvements</p> <p><u>Structures</u> Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design</p>	<p><u>Food</u> Learning that climate affects food growth Working with cooking equipment safely and hygienically Learning that imported foods travel from far away and this can negatively impact the environment Learning that vegetables and fruit grow in certain seasons Learning that each fruit and vegetable gives us nutritional benefits Learning to use, store and clean a knife safely</p> <p><u>Mechanical Systems</u> Understanding how pneumatic systems work Learning that mechanisms are a system of parts that work together to create motion</p>

<p>Drawing and labelling a castle design using 2D shapes, labelling: the 3D shapes that will create the features – materials need and colours</p>	<p>Identifying a design criteria and a target audience</p>	<p>Suggesting points for modification of the individual designs</p>	<p>Understanding that pneumatic systems can be used as part of a mechanism Learning that pneumatic systems force air over a distance to create movement</p> <p><u>Structures</u> Identifying features of a castle Identifying suitable materials to be selected and used for a castle, considering weight, compression, tension Extending the knowledge of wide and flat based objects are more stable Understanding the terminology of strut, tie, span, beam Understanding the difference between frame and shell structure</p>
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	Key Knowledge	Vocabulary	Assessment Criteria – ‘Can I...? statements’
<p>Eating Seasonally</p>	<ul style="list-style-type: none"> To know that climate affects food growth To know that importing food impacts the environment and is one of the reasons why we should eat seasonal foods grown in the UK To create a recipe that is healthy and nutritious using seasonal vegetables 	<p>Climate Diet Imported Ingredients Natural Processed Reared Seasonal Seasons Sugar</p>	<ul style="list-style-type: none"> Can I explain that fruits and vegetables grow in different countries based on their climates? Can I demonstrate knowledge that imported food will have travelled from far away and has an impact on the environment? Can I demonstrate knowledge that vegetables and fruit grow in certain seasons and that in the UK we often import food from other countries when it is not in season? Can I design my own tart recipe using seasonal ingredients? Can I demonstrate my understanding of the basic rules of hygiene and safety when working with food?

	<ul style="list-style-type: none"> To safely follow a recipe when cooking 		<ul style="list-style-type: none"> Can I follow the instructions within a recipe?
Mechanical systems: pneumatic toys	<ul style="list-style-type: none"> Understanding how pneumatic systems work To design a toy which uses a pneumatic system To create a pneumatic system To test and finalise ideas again design criteria 	Adapt Component Input Lever Linkage system Mechanism Motion Output Pivot Pneumatic system Properties Reinforce Research Thumbnail sketch	<ul style="list-style-type: none"> Can I draw accurate diagrams with correct labels, arrows and explanations and correctly identifying definitions for key terms? Can I develop design criteria from a design brief? Can I generate suitable ideas using thumbnail sketches and exploded diagrams? Can I show knowledge that there are three different types of pneumatic systems that I can use to design my toy and I can use recycled household objects to make it? Can I show knowledge that different types of drawings are used in design to explain ideas clearly? Can I select appropriate equipment and materials to build a working pneumatic system and assemble it within the housing to create the desired motion? Can I create a finished pneumatic toy that fulfils the design brief?
Structures: Constructing a castle/landmark	<ul style="list-style-type: none"> To identify features of a castle To design a castle To construct 3D nets To construct and evaluate my final product 	2D 3D Battlements Castle Curtain walls Design Drawbridge Flag Gatehouse Moat Net Scoring Shape Structure Tab Tower Turret	<ul style="list-style-type: none"> Can I draw a simple castle that includes the most common features, and labels? Can I design a castle with key features which appeals to a given person/purpose? Can I cut along solid lines, score along dashed lines, and glue securely to assemble geometric shapes? Can I utilise skills to build a complex structure from simple geometric shapes? Can I evaluate my work by answering simple questions?