



St Joseph's Design Technology Knowledge and Skills – 2021/2022

	EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
	Rec / Nurs	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Key Vocabulary	Cut Chop Fruit Vegetable Healthy Peel Turn Wheel Move Fast Slow Strong Weak Big Small Collage Attach Glue Stick Fabric	Hygiene Variety Diet ingredients Peel Peeler Recipe Slice grate Design Evaluate Wheel Axle Support Stitch Textiles Needle Template thread	Nutrition Seasonal Investigate develop purpose annotate Eat Well Plate Structure wheel Frame Diagonal Struts 2D shapes 3D shapes Stable Weak Running stitch	Mechanical Cams Pulleys Assemble Battery Battery pack Bulb Bulb holder Buzzer Circuit Circuit symbol Component Computer aided design (CAD) Design Design brief Design criteria			

Food & Hygiene

Knowledge

<ul style="list-style-type: none"> Knows some foods that are healthy Begin to develop awareness of the importance of hygiene when preparing/eating food. 	<ul style="list-style-type: none"> Know about the need for a variety of foods in a diet. Name the tools they are using. Names a variety of different food items Has some understanding of good hygiene when handling food 	<ul style="list-style-type: none"> Know about the <i>Eatwell Plate</i>. Understand where food comes from. Name the tools needed to work the ingredients. 	<ul style="list-style-type: none"> Begin to understand the food groups on the <i>Eatwell Plate</i>. 	<ul style="list-style-type: none"> Know where and how ingredients are reared and caught. Understand seasonality. 	<ul style="list-style-type: none"> Know where and how ingredients are grown and processed. Use correct vocabulary appropriate to the project. 	<ul style="list-style-type: none"> Understand and apply principles of a healthy and varied diet.
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Skills

<ul style="list-style-type: none"> Combine materials to achieve planned effect Can design, make, amend and talk about what they have made Uses materials and tools safely and appropriately 	<ul style="list-style-type: none"> Group familiar food products, e.g. fruit and veg. Cut and chop a range of ingredients. Work safely and hygienically. Explore existing products and investigate how they have been made (including teacher-made examples). 	<ul style="list-style-type: none"> Cut, peel, grate, chop a range of ingredients. Work safely and hygienically. Select the tools needed to work the ingredients. Add notes to drawings to help explanations. 	<ul style="list-style-type: none"> Investigate similar products to the one to be made to give starting points for design. Decide which idea to develop. Follow instructions/recipes. Join and combine a range of ingredients. Use appropriate finishing techniques. 	<ul style="list-style-type: none"> Record the plan by drawing using annotated sketches. Identify the strengths and weaknesses of their design ideas in relation to purpose/user. Make healthy eating choices -use the <i>Eatwell Plate</i>. Prepare and cook using different cooking techniques. 	<ul style="list-style-type: none"> Record ideas using annotated diagrams. Join and combine a widening variety of ingredients. Select and prepare foods for a particular purpose. 	<ul style="list-style-type: none"> Use researched information to inform decisions. Produce detailed lists of ingredients/components/materials and tools Choose ingredients to support healthy eating choices when designing their products. Prepare and cook a variety of mostly savoury dishes using a range of cooking techniques. Use exploded diagrams and cross-sectional to communicate ideas.
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Textures	Skills		
	<ul style="list-style-type: none"> • Cut out shapes which have been created using a template. • Join fabrics • Decorate fabrics • Colour fabrics • Explore existing products, looking at how they are made • Talk about what they like/dislike 	<ul style="list-style-type: none"> • Join fabrics using running stitch • Understand seam allowance • Select from a range of tools for cutting, joining, finishing • Select from materials according to their functional properties • Consider how finish product could be improved • Consider how well finished product matches design 	

Structures	Knowledge					
			<ul style="list-style-type: none"> • Knows how wheels turn on an axle 	<ul style="list-style-type: none"> • Knows some ways of making structures stronger 		
	Skills					
<ul style="list-style-type: none"> • Can design, make, amend and talk about what they have made • Uses materials and tools safely and appropriately 	<ul style="list-style-type: none"> • Explore existing products, looking at how they are made • Mark out materials to be cut using a template • Join appropriately for different materials • Explore how to make structures stronger • Propose more than one idea for product (as a class) 	<ul style="list-style-type: none"> • Use pictures and words to convey what they want to design • Propose more than one idea • Explain what they are making • Say what they like/do not like about their items they have made and attempt to say why • Test different ways of making structures stable • Start to use technical vocabulary 	<ul style="list-style-type: none"> • Create shell or frame structures • Strengthen frames with diagonal struts • Make structures more stable by giving them a wide base • Measure and mark accurately to 1cm • Draw/sketch products to help understand how they are made • Plan each stage of the making process 			

M e	Knowledge				
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			Skills		
	<ul style="list-style-type: none"> • Use construction kits to explore how axles work • Join appropriately for different materials • Try out different axle fixings • Make models • Attach wheels to chassis • Explore how to make structures stronger • Use pictures and words to convey what they want to design/make • Talk about what they are making • Talk about design • Say what they like/dislike about their design 			<ul style="list-style-type: none"> • Research and evaluate different products. • Consider user and purpose. • Use kits, models and drawings to help formulate design ideas. • Cut strip, wood, dowel, square section wood accurately to 1mm. • Build frameworks to support mechanisms. • Use mechanical systems such as cams, pulleys, gears. • Consider and explain how finished product could be improved related to design criteria. 	<ul style="list-style-type: none"> • Plan a sequence of work. • Devise step by step plans which can be read/ followed by someone else. • Identify strengths and weaknesses of their design ideas. • Make prototypes. • Use electrical systems such as motors and switches. • Incorporate a circuit into a model. • Use electrical systems such as switches, bulbs and buzzers.

			Knowledge	
				<ul style="list-style-type: none"> • Apply understanding of computing to program, monitor and control products
			Skills	
CAD			<ul style="list-style-type: none"> • Investigate key events and individuals in design technology. • Use CAD where appropriate. • Use prototypes to develop and share ideas. • Develop a vocabulary that can help you express ideas. • Create a 2D representation of a character using papercraft materials. 	<ul style="list-style-type: none"> • Identify ways that design thinking can help solve problems. • Develop visual literacy and a vocabulary that can help you express your ideas. • Identify the five steps in design thinking: understand, define, ideate, prototype and test, and refine.

			<ul style="list-style-type: none">• Create a 3D representation of a character within Tinkercad.• Use mathematical computation to solve real-world problems.• Introduce a 3D avatar to the teacher or the class• Explore TinkerCAD program• Drag and drop shapes• Use copy & paste• Follow instructions to complete simple design	<ul style="list-style-type: none">• Apply design thinking methods to a real-world problem.• Create 2D and 3D models within Tinkercad.• Create a digital or physical prototype based on your ideas.• Identify ways that design thinking can help solve problems.• Develop vocabulary that can help you express your ideas.• Apply design thinking methods to brainstorm a solution to a problem.• Calculate dimensions of different shapes to achieve specific volumes.• Create 3D models within Tinkercad.• Create a digital or physical prototype based on your ideas
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