

**Subject: Design Technology Year 3**

- What are the aims and intentions:

**Designing**

- gather information about the needs and wants of particular individuals and groups
- develop their own design criteria
- generate realistic ideas, focusing on the needs of the user
- make design decisions that take account of the availability of resources

**Making**

- measure, mark out, cut and shape materials and components
- assemble, join and combine materials and components

**Evaluating**

- refer to their design criteria as they design and make
- use their design criteria to evaluate their completed product

Cooking and Nutrition

- that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world that to be active and healthy, food and drink are needed to provide energy for the body

Term:	Topic:	Knowledge	Skills:	Key Questions
Autumn	<p><b>All Aboard!</b></p> <p><b>Structures Shell structures</b></p>	<ul style="list-style-type: none"> <li>• Develop and use knowledge of how to construct strong, stiff shell structures.</li> <li>• Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>• Describe the purpose of their products</li> <li>• Indicate the design features of their products that will appeal to intended users</li> <li>• Explain how particular parts of their products work</li> <li>• Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas</li> <li>• Select tools and equipment suitable for the task</li> <li>• Explain their choice of tools and equipment in relation to the skills and techniques they will be using</li> <li>• Select materials and components suitable for the task</li> <li>• Explain their choice of materials and components according to functional properties and aesthetic qualities</li> <li>• Order the main stages of making</li> <li>• Follow procedures for safety and hygiene</li> <li>• Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</li> <li>• Measure, mark out, cut and shape materials and components with some accuracy</li> <li>• Assemble, join and combine materials and components with some accuracy</li> <li>• Apply a range of finishing techniques, including those from art and design, with some accuracy</li> <li>• Identify the strengths and areas for development in their ideas and products</li> <li>• Refer to their design criteria as they design and make</li> <li>• Use their design criteria to evaluate their completed products</li> </ul>	<ul style="list-style-type: none"> <li>• What is the purpose of different vehicles?</li> <li>• How do they move and how are they used?</li> <li>• What features can you identify on a train? How do they work? Why are they there?</li> <li>• How does a model vehicle move?</li> <li>• How will your design match the design criteria?</li> <li>• Why will the customer want to buy it?</li> <li>• Why did you choose to use those materials/ those shapes/ those joins?</li> <li>• How did you make your train?</li> <li>• What skills and techniques did you use when constructing your train?</li> <li>• How did you make sure you used tools and equipment safely?</li> <li>• Did your final product move as you wanted it to?</li> <li>• Did your final product match your design criteria?</li> <li>• What did you like about your final product?</li> <li>• What would you change about your final product?</li> </ul>

			<ul style="list-style-type: none"> <li>Identify how well products work to achieve their purposes</li> </ul>	
	Key Vocabulary	user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing		
		Cultural Capital: Create a model train with working wheel/axel system; explore and use a range of toy vehicles; Visit to Shildon Museum to develop design ideas.		
Spring 1	<b>Fighting Fit!</b>  <b>Food</b>	<ul style="list-style-type: none"> <li>Understand where food comes from</li> <li>Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world</li> <li>Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</li> <li>Understand that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell Plate</li> <li>Know that to be active and healthy, food and drink are needed to provide energy for the body</li> <li>Understand that food ingredients can be fresh, pre-cooked and processes</li> </ul>	<ul style="list-style-type: none"> <li>Describe the purpose of their products</li> <li>Indicate the design features of their products that will appeal to intended users</li> <li>Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas</li> <li>make design decisions that take account of the availability of resources</li> <li>Select tools and equipment suitable for the task</li> <li>Explain their choice of tools and equipment in relation to the skills and techniques they will be using</li> <li>Select materials and components suitable for the task</li> <li>Explain their choice of materials and components according to functional properties and aesthetic qualities</li> <li>Order the main stages of making</li> <li>Follow procedures for safety and hygiene</li> <li>Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</li> <li>Identify the strengths and areas for development in their ideas and products</li> <li>Refer to their design criteria as they design and make</li> <li>Use their design criteria to evaluate their completed products</li> <li>Identify how well products work to achieve their purposes</li> </ul>	<ul style="list-style-type: none"> <li>What ingredients would you find in a sandwich?</li> <li>Where do these ingredients come from?</li> <li>How are these foods prepared/cooked?</li> <li>What is a balanced/healthy diet?</li> <li>Which food groups do these foods belong to?</li> <li>What food hygiene procedures do we need to follow when working with food?</li> <li>How does your design meet the needs of the consumer?</li> <li>Does your design meet the costing requirements?</li> <li>What tools and processes will you use to make your design?</li> <li>What packaging will you use? Why?</li> <li>How did you make sure you used equipment safely?</li> <li>Did your final product look, smell and taste as you wanted it to?</li> <li>Did your final product match your design criteria?</li> <li>What did you like about your final product?</li> <li>What would you change about your final product?</li> </ul>
	Key Vocabulary	name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible		
		Cultural Capital: Create a sandwich and packaging. Link to Bishop Auckland Food Festival; Science topic – Healthy eating		

Spring 2	<p><b>It's about to erupt</b></p> <p><b>Textiles</b></p> <p>2d shape to 3d product</p>	<ul style="list-style-type: none"> <li>• Know how to strengthen, stiffen and reinforce existing fabrics.</li> <li>• Understand how to securely join two pieces of fabric together.</li> <li>• Understand the need for patterns and seam allowances.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate and evaluate a range of existing products.</li> <li>• Follow a design criteria to create and communicate ideas.</li> <li>• Perform tie-dye as a technique for decorating fabric.</li> <li>• Cut around a template</li> <li>• Use a running stitch to create a hem</li> <li>• Use a functional technique to decorate fabric</li> <li>• Use an appropriate stitch to join fabric</li> <li>• Identify how well products work to achieve their purpose.</li> </ul>	<ul style="list-style-type: none"> <li>• Why do we need to analyse existing products?</li> <li>• What was the best feature of the product? Why?</li> <li>• What was the worst feature? Why</li> <li>• Why do we have a design criteria?</li> <li>• Which dyeing technique did you choose? Why?</li> <li>• How did you dye the fabric using this technique?</li> <li>• Which filling did you decide on? Why did you choose this?</li> <li>• Which techniques are/are not functional for decorating fabric? Why?</li> <li>• Did your final product look and feel how you wanted it to?</li> <li>• Did your final product match your design criteria?</li> <li>• What did you like about your final product?</li> <li>• What would you change about your final product?</li> </ul>
	Key Vocabulary	textiles, product, user, design brief, fabric, design criteria, annotate, tie-dye, technique, decorate, cut, shape, functional, hem, template, stitch, technique, quality, join, overcast stitch, aesthetic, evaluate, test.		
		Cultural Capital: Circus skills; Visit from textile artist		