

**KS2 DT Curriculum NC End Points:****Designing**

- Can use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- Is able to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

**Making:**

- Is able to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing],
- Can accurately select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.

**Evaluating:**

- Is able to investigate and analyse a range of existing products.
- Can evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- Understands how key events and individuals in design and technology have helped shape the world.

**Technical Knowledge:**

- Applies their understanding of how to strengthen, stiffen and reinforce more complex structures.
- Understands and can use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].
- Understands and can use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].
- Applies their understanding of computing to program, monitor and control their products.

**Food technology:**

- Understand and can apply the principles of a healthy and varied diet.
- Can prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed

Term	Learning Focus		Cross Curricular links
	Knowledge	Skills	
Spring 1	<b>Mechanisms – Moving Monster</b> <ul style="list-style-type: none"> <li>• A <b>Pneumatic</b> system is one that works using gases (air).</li> <li>• A <b>Hydraulic</b> system is one that works using liquids (water).</li> <li>• A <b>cam</b> is a rotating or sliding piece used in transforming rotary (around) motion into linear (across) motion</li> <li>• Energy produced by pneumatic systems can be more flexible, less costly, more reliable and less dangerous than some actuators and electric motors. There are lots of familiar examples - <a href="#">examples-of-pneumatics.html</a></li> <li>• Something that is squashed, such as air in a tube, is compressed.</li> <li>• The 'input' is what goes into a system and 'output is what comes out</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate, analyse and evaluate familiar objects that use air to make them work</li> <li>• Independently produce suitable lists of tools, equipment/materials needed</li> <li>• Construct a simple pneumatic system by joining a balloon to 5mm tubing and then to a washing-up liquid bottle.</li> <li>• Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user.</li> <li>• Produce annotated sketches, cross-sectional drawings and exploded diagrams to help me develop and improve my ideas and communicate my ideas to others</li> </ul>	

	<ul style="list-style-type: none"> <li>Pressure is the force used on an object or surface.</li> <li>Inflating something is filling it with air or a gas to make it swell up and deflating is removing the pressurised air to allow an object, like a balloon, to shrink.</li> <li>A Syringe is a tube with a nozzle and plunger for sucking and blowing air or liquids.</li> <li>A System is a set of related parts or components used to create an outcome.</li> <li>In a pneumatic system, the 'input movement' is where the user pushes or pulls a syringe or pump. The 'output movement' is where the object at the end of the tube moves</li> <li>To select suitable tools and equipment, explain choices in relation to required techniques and use accurately</li> <li>Evaluate quality of design while designing and making</li> <li>I can use a CAD program to help me develop and communicate my ideas</li> </ul>	<ul style="list-style-type: none"> <li>Independently order the main stages of making.</li> <li>Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons.</li> <li>Select from and use finishing techniques suitable for the product they are creating.</li> <li>Evaluate ideas and finished product against specification, considering purpose and appearance</li> <li>Understand and use pneumatic mechanisms.</li> <li>Know and use technical vocabulary relevant to the project</li> </ul>	
Summer 1	<b>Food Technology – pizza</b> <ul style="list-style-type: none"> <li>Begin to understand and apply the principles of a healthy and varied diet</li> <li>Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.</li> <li>Understand that ingredients can be fresh, pre-cooked or processed</li> <li>Know how to specify a design to make it more appealing to a specific target group.</li> <li>Know about the influence of specific manufacturers and consider the importance and usefulness of market research in this context.</li> <li>Understand that recipes can be changed by adding or taking away ingredients</li> <li>Know how to evaluate their product against the product criteria they have generated individually, as a means to improve their work</li> </ul>	<ul style="list-style-type: none"> <li>To review existing products and describe what makes them appealing</li> <li>Use own knowledge to describe pizza and elements that make it appealing</li> <li>Take the needs of the user and what resources are available for me to use into account</li> <li>Plan the main stages of making my product and list the main stages (in order)</li> <li>Can refer to design criteria while designing and making a product, deciding what to change to make design better and explain reasons</li> <li>Make a product for a target audience</li> <li>Select suitable tools and equipment, explain choices in relation to required techniques and use accurately</li> <li>Can explain how to be safe and hygienic</li> <li>Use cooking techniques such as: chopping, grating, slicing, mixing, spreading, kneading and baking</li> </ul>	<p><b>Math - calculate the cost of the ingredients used in our bread rolls</b></p> <p><b>English - create a recipe for making bread by taking notes while watching a recipe video, using features of instructional writing</b></p> <p><b>Science – changing materials</b></p>
Summer 2	<b>Electrical &amp; mechanical components – a torch</b> <ul style="list-style-type: none"> <li>Understand and use electrical systems in their products</li> <li>Select from and use a wider range of tools, materials and components, including construction materials, according to their functional properties and aesthetic qualities</li> <li>Present their design so it is fit for purpose and show components</li> <li>Discuss by whom, when and where existing products were designed</li> <li>Evaluate their ideas and products against their own design</li> </ul>	<ul style="list-style-type: none"> <li>To be able to show expertise when using a range of tool and equipment.</li> <li>To be able to explain how product will appeal to the given audience</li> <li>To select suitable tools and equipment, explain choices in relation to required techniques and use accurately</li> <li>Write a step by step set of instructions to follow for building their torch, including the tools and materials.</li> <li>Use number of components in circuit</li> </ul>	<p><b>Science - electricity</b></p>

	criteria and consider the views of others to improve their work	<ul style="list-style-type: none"> <li>• Incorporate switch into product</li> <li>• Program a computer to control a product</li> <li>• To be able to say I will ensure my product works</li> <li>• To test my product</li> <li>• To be able to say what improvements were made along the way and why.</li> <li>• To evaluate my product- what went well what didn't- evaluate against appearance and the way it works.</li> </ul>	
<p><b>Ambition / Intent:</b>  At Camrose Primary School, we believe that Design Technology is essential to a rich and balanced education that develops the whole child. The study of Design Technology gives children an insight into how the world is being shaped around them for the evolving needs of people and communities from past to present. In a rapidly changing age of technology, it is essential that children are equipped with the knowledge and technical skills to creatively solve real life problems, so that they have the ability to make their own impact on the world around them.</p> <p><b>Design / Implementation:</b>  The National Curriculum provides the structure and skill development for the Design &amp; Technology curriculum being taught throughout the school. At Camrose, we are dedicated to the teaching and delivery of a high-quality Design and Technology curriculum through well planned and resourced projects and experiences.</p> <p>We have determined that Design Technology will taught in two or three units across the school year. During Design and Technology units, our children draw upon subject knowledge and skills within Mathematics, Science, History, Computing and Art. Through the evaluation of past and present technology they can reflect upon the impact of Design Technology on everyday life and the wider world.</p> <p><b>Impact:</b>  At Camrose, we ensure all of our pupils are able to approach problems creatively and in a range of ways. By providing a range of contexts and the necessary skills, we endeavour to support pupils in their future educational journey and in the understanding of the ever-developing world around them.</p> <p>The skills and attributes they develop will benefit them beyond school and into adulthood: the ability to use time efficiently, work with others productively, show initiative, independence, resilience and manage risks effectively will ensure well-rounded citizens who will make a difference in the wider world.</p>			