

**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	
Autumn 2	<b>Electrical &amp; mechanical components –</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>• 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> <li>• A point about which a lever turns is called a pivot.</li> <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</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate, analyse and evaluate familiar objects that use air to make them work e.g. bicycle pump, balloon, inflatable swimming aids, and foot pump for inflating an air bed. What does the air do? How has it been used in the design of these products? How can air be used to move heavy objects?</li> <li>• Construct a simple pneumatic system by joining a balloon to 5mm tubing and then to a washing-up liquid bottle. What happens to the air when you squeeze the bottle? What happens when you let go? Can you lift a soft toy or a note pad using a balloon?</li> <li>• Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user.</li> <li>• Use annotated sketches and prototypes to develop, model and communicate ideas.</li> <li>• Order the main stages of making.</li> <li>• Select from and use appropriate tools with some accuracy</li> </ul>	<b>Science</b>

	<p>to allow an object, like a balloon, to shrink.</p> <ul style="list-style-type: none"> <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>• I can use a CAD program to help me develop and communicate my ideas</li> </ul>	<p>to cut and join materials and components such as tubing, syringes and balloons.</p> <ul style="list-style-type: none"> <li>• Select from and use finishing techniques suitable for the product they are creating.</li> <li>• Investigate and analyse books, videos and products with pneumatic mechanisms.</li> <li>• Evaluate their own products and ideas against criteria and user needs, as they design and make.</li> <li>• Understand and use pneumatic mechanisms.</li> <li>• Know and use technical vocabulary relevant to the project</li> </ul>	
Spring	<p><b>Cooking &amp; nutrition - tropical coleslaw recipe</b></p> <ul style="list-style-type: none"> <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>• Combine range of food preparation and cooking techniques such as peeling, chopping, slicing, grating, mixing, stirring.</li> <li>• Know how to prepare a deli coleslaw safely (when using a sharp knife, peeler and grater).</li> <li>• Know hygiene measures before and during preparation of food</li> <li>• Write their own design criteria identifying needs, wants, preferences and values of particular individuals and groups.</li> <li>• Explore and design an 'on the go lunch during a school trip' using digital sources i.e. internet, word processing software</li> <li>• Use feedback from others to help evaluate how well the lunch achieved its purposes and met the user's needs and wants.</li> </ul>	<ul style="list-style-type: none"> <li>• Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose.</li> <li>• Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.</li> <li>• Plan the main stages of a recipe, listing ingredients, utensils and equipment.</li> <li>• Select and use appropriate utensils and equipment to prepare and combine ingredients.</li> <li>• Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.</li> <li>• Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.</li> <li>• Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</li> </ul>	<p><b>Science: Healthy Diet/hygiene</b></p>

**Ambition / Intent:**

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.

**Design / Implementation:**

The National Curriculum provides the structure and skill development for the Design & 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.

We have determined that Design Technology will be 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.

**Impact:**

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.

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.