

Design and Technology Progression and Coverage



We are a Right Respecting School and this statement supports the following articles from the UN Convention on the Rights of a Child

Article 13: (Freedom of expression): Every child has the right to share information in any way they choose, including by talking, drawing or writing as long as it does not harm others.

Article 28: (Right to education): Every child has the right to a primary education, which should be free. They should be encouraged to reach the highest level of education of which they are capable.

Article 29: (Goals of education) Education must develop every child's personality, talents and abilities to the full. It must encourage the child's respect for human rights, as well as respect for their parents, their own and other cultures, and the environment.

Article 31: (Leisure, play and culture): Children have the right to relax and play, and to join in a wide range of cultural, artistic and other recreational activities.

Design and Technology Year 2				
Design	Make	Evaluate	Food Technology	Mechanics
Use knowledge of a range of products to inform plan and design.	Select and use an increasing range of tools to cut, shape and join materials and components.	Investigate and compare a range of similar existing products.	Use equipment safely with an awareness of food hygiene.	Construct cubes of different sizes from a net.
Talk about and disassemble products and describe their function.	Use a ruler to measure and mark lines for cutting.	Compare and contrast the similarities and differences of products with the same function.	Plan and make a simple healthy food product.	With support, attach a fixed axle to a chassis and add wheels so they can move freely.
Use simple prototypes, labelled sketches and detailed instructions in plans and designs.	Make and use gluing tabs.	Evaluate ideas and products against design criteria and suggest ways in which products can be improved.		Understand how simple mechanisms relate to moving vehicles or winding up.
Talk in depth about ideas, plans and reasons for choices.	Join two pieces of fabric using sewing.	Gain an understanding of the way in which the work of famous inventors, designers, engineers, chefs and manufacturers have impacted on the development of product design and function.		Make a wheeled vehicle that moves using a mechanism that winds.
	Know how to start, end and use running stitch.	Use this understanding to inform and support evaluation and further development of own product.		
	Make simple paper models, mock ups and templates.			
	Select materials and components according to known characteristics and functions.			
	Select, an appropriate way to improve the appearance of a product.			
	Follow procedures for safety and hygiene.			

Design and Technology Y3				
Design	Make	Evaluate	Food Technology	Mechanisms
Use research to develop design criteria that are fit for purpose. Disassemble products and identify ingredients to describe in detail their functions / uses. Use annotated sketches, cross-sectional diagrams and increasingly complex prototypes. Support discussions about ideas, plans and designs with relevant information.	Select and use tools and equipment to measure, mark out and shape materials and components. Score card for accurate folds. Use a hack saw and bench hook safely. Select from and use a wide range of materials and components according to both functional and aesthetic qualities. Make increasingly complex paper models, mock ups and templates using different joining and cutting methods. Select the most effective finish to enhance the appearance of a product. Follow procedures for safety and hygiene.	Use knowledge of the similarities and differences between products with the same function to support identification of the most effective product. Evaluate ideas and products against own design criteria, taking into account the views of others. Gain an understanding of the way in which the work of famous inventors, designers, engineers, chefs and manufacturers have impacted on the development of product design and function. Use this understanding to inform and support evaluation and further development of own product.	Use equipment safely with an awareness of food hygiene. Prepare food by cutting, grating and peeling and use machines e.g. blenders Understand that food products are made of several components and that a variety of food is needed for a healthy, varied diet. Combine components according to taste, texture and appearance. Know that food ingredients can be fresh, pre-cooked and processed. Have a wider understanding of different fruits and where they are grown. Understand how we can have some fruits out of season because of speed of transport and refrigeration.	Construct cuboids of different sizes from a net. Control pneumatic systems. Make a working hinge. Use construction kits with gears to mesh gears at right angles.

Design and Technology Year 4				
Design	Make	Evaluate	Food Technology	Mechanisms
Generate plans and designs based on research and ideas that take account of the user's views and the intended purpose. Produce detailed designs and plans using prototypes, commentary and diagrams that include measurements. Link discussions about ideas, plans and designs to investigation, disassembly and evaluation of a range of products describing in detail their parts and their function.	Select and use tools, templates and equipment to measure, mark out and shape materials and components accurately. Use a G clamp effectively. Join and combine materials and components in permanent and temporary ways (textiles or sewing). Select a range of appropriate tools to cut, shape and join materials and components effectively. Make a range of complex paper models, mock ups and templates. Produce a well-finished product that fulfils the functional and aesthetic design criteria. Follow procedures for safety and hygiene.	Investigate and use analysis of existing products to inform own work. Identify from a range the key features and functions needed to create an effective and efficient working product. Give reasons, supported by factual evidence, for the success of aspects of a product. Gain an understanding of the way in which the work of famous inventors, designers, engineers, chefs and manufacturers have impacted on the development of product design and function e.g. Dyson. Use this understanding to inform and support evaluation and further development of own product.	Use equipment safely with an awareness of food hygiene. Analyse the taste, texture, smell and appearance of a range of food. Measure and weigh ingredients appropriately. Join and combine a range of ingredients. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	Construct a pulley that allows a load to travel horizontally along a rope. Identify, describe and evaluate products that contain pulleys and drive belts. Create pulleys and drive systems that can be driven by motor and computer.

Design and Technology Year 5

Design	Make	Evaluate	Food Technology	Mechanisms
Clarify and justify plans, designs and ideas by drawing upon and using a range of relevant sources of information. Produce detailed designs and plans drawn to scale from a range of viewpoints, using pattern pieces and computer-aided design packages effectively. Discuss ways in which ideas, plans and designs are formed and modify to ensure that the design criteria are met effectively.	Select a range of appropriate tools to cut, shape and join paper, card and wood and components with accuracy and precision. Use and increasing range of tools and equipment to measure, mark out and shape materials and components accurately. Use a saw and a drill to make an off-centre hole. Use techniques for reinforcing and strengthening. Join wood to wood using glue and strengthening techniques to create a shell or a frame structure. Eg in a motor vehicle Join and combine a range of materials and components using the most effective permanent and temporary way. Strengthen materials to make a product functional eg in a pair of slippers Measure, mark and cut a square section, strip and dowel. Make and adapt where necessary complex mock ups and templates. Identify and apply an appropriate technique to ensure a high-quality end-product which meet the design criteria. Follow procedures for safety and hygiene.	Use analysis of existing products, supported by accurate factual information, to inform own work. Test and evaluate products to identify the variants which may affect the function of a product. Give reasons, supported by factual evidence, for the success of aspects of a product and provide considered solutions to resolve those parts that could be improved. Gain an understanding of the way in which the work of famous inventors, designers, engineers, chefs and manufacturers have impacted on the development of product design and function e.g. Dyson. Use this understanding to inform and support evaluation and further development of own product	Use equipment safely with an awareness of food hygiene. Weigh and measure accurately using a variety of measures, gram, Kgs, litres, millilitres. Experience a range of food ingredients and cooking methods. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed	Make a working cam for movement. Know how cams or pulleys or gears create movement Make a wheeled vehicle that moves using electricity to power it.

Design and Technology Year 6				
Design	Make	Evaluate	Food Technology	Mechanisms
Use research and exploration, such as the study of different cultures, to identify and understand user needs. Develop and communicate ideas using annotated sketches, detailed plans, 3d and mathematical modelling, oral and digital presentations and computer-based tools. Use a variety of approaches, e.g. user-centres design to generate creative ideas and avoid stereotypical responses. Produce ordered sequences and schedules for manufacturing products, detailing resources required. Produce costings using spreadsheets for products they design and make.	Select from and use a wider, more complex range of materials, components and ingredients, taking account on their properties. Select from and use tools, techniques, processes, equipment and machinery precisely. Use techniques for reinforcing and strengthening. Use a broad range of manufacturing techniques including handcrafted skills and machinery to manufacture products precisely. Stitch and join textiles. Create 3D products using pattern pieces and seam allowances. Build a wooden framework including strengthening techniques, an electrical circuit and switch. Follow procedures for safety and hygiene and understand the process of risk assessment.	Understand developments in DT, its impact on individuals, society and the environment. Test, evaluate and refine ideas and products against a specification, taking into account the views of intended users. Analyse the work of past and present professionals and others to develop and broaden understanding. Investigate new and emerging technologies. Relate the work of designers, engineers, chefs, technologists and manufacturers to own products and designs.	Select and prepare foods for a particular purpose. Eg end of year leaving party, parents' meeting Prepare a food product using correct equipment. Join and combine food ingredients appropriately e.g. beating/rubbing in. Show awareness of a healthy diet from understanding a balanced diet. Know that a recipe can be adapted by adding or substituting one or more ingredients	Understand how more advanced mechanical systems, used in a product, enable changes in movement and force. Know how more complex electrical circuits and components can be used to make products. Explore gears and understand how they work. How to programme a computer to monitor changes in the environment and control their products