Design and Technology

Skills Overview

St Michael's Roman Catholic Primary School

Holding God's Hand, we nurture hearts, minds and spirits.

	Year 1
Cooking and Nutrition	• Talk about what he/she eats at home and begin to discuss what healthy foods are • Say where some food comes from and give examples of food that is grown • Use simple tools with help to prepare food safely • Understand the importance of food hygiene
Processes	• Create simple designs for a product • Use pictures and words to describe what he/she wants to do • Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing • Use a range of simple tools to cut, join and combine materials and components safely • Ask simple questions about existing products and those that he/she has made • Evaluate their own creation and other existing ones. • Explore and create simple structures and mechanisms.

	Year 2
Cooking and Nutrition	• Understand the need for a variety of food in a diet including some simple food groups • Understand that all food has to be farmed, grown or caught • Use a wider range of cookery techniques to prepare food safely • Understand the importance of food hygiene
Processes	• Design products for users based on design criteria • Create, develop, and communicate ideas in a variety of ways. • Choose appropriate tools, equipment, techniques and materials from a wide range • Safely measure, mark out, cut and shape materials and components using a range of tools • Evaluate and assess existing products and those made using a design criteria • Investigate ways to create, adapt and improve structures including different ways to join materials. • Explore and use mechanisms e.g. levers, sliders, wheels and axles.

	Year 3
Cooking and Nutrition	• Name and discuss different food groups and name food from each group • Develop vocabulary and knowledge using smell, taste, texture and feel • Understand how food has to be grown, farmed or caught in Europe and the wider world • Use a wider variety of ingredients and techniques to prepare and combine ingredients safely including the use of recipes.
Processes	• Use knowledge of existing products to design and develop his/her own functional product • Safely measure, mark out, cut, assemble and join with some accuracy • Make suitable choices from a wider range of tools, materials and techniques and plan out the main stages of using them • Investigate and analyse existing products and those he/she has made, considering a wide range of factors • Create and develop a wide range of structures including shell/frame structures and understand how to make these stronger/more stable. • Understand how mechanical systems such as levers and linkages or pneumatic systems create movement • Evaluate design ideas and the finished product including how it could be improved.

	Year 4
Cooking and Nutrition	• Understand what makes a healthy and balanced diet, and that different foods and drinks provide different substances the body needs to be healthy and active • Understand seasonality and the advantages of eating seasonal and locally produced food • Read and follow recipes which involve several processes, skills and techniques • Analyse the taste, texture, smell and appearance of different foods.
Processes	• Use knowledge of existing products to design a functional and appealing product for a particular purpose and audience • Design using a range of sketches, diagrams and prototypes. • Begin to create a plan for the design process. • Use techniques which require more accuracy to cut, shape, join and finish his/her work e.g. Cutting internal shapes, slots in frameworks • Use his/her knowledge of techniques and the functional and aesthetic qualities of a wide range of materials to plan how to use them • Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user • Apply techniques he/she has learnt to strengthen structures and explore his/her own ideas • Understand and use electrical systems in products

	Year 5
Cooking and Nutrition	• Understand the main food groups and the different nutrients that are important for health • Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable / tasty to eat • Select appropriate ingredients and use a wide range of techniques to combine them for a particular purpose.
Processes	• Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product • Create prototypes and patterns to show his/her ideas • Make careful and precise measurements so that joins, holes and openings are in exactly the right place selecting and using the correct tools. • Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques • Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work • Build more complex 3D structures and apply his/her knowledge of strengthening techniques to make them stronger or more stable • Understand how to use more complex mechanical and electrical systems.

	Year 6
Cooking and Nutrition	• Confidently plan a series of healthy meals based on the principles of a healthy and varied diet • Use information on food labels to inform choices • Research, plan and prepare and cook a savoury dish, applying his/her knowledge of ingredients and his/her technical skills • Consider influences of different chefs.
Processes	• Use research he/she has done into famous designers and inventors to inform the design of his/her own innovative products • Generate, develop, model and communicate his/her ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design • Apply his/her knowledge of materials and techniques to refine and rework his/her product to improve its functional properties and aesthetic qualities • Use technical knowledge accurate skills to problem solve during the making process • Use his/her knowledge of famous designs to further explain the effectiveness of existing products and products he/she have made • Use a wide range of methods to strengthen, stiffen and reinforce complex structures and can use them accurately and appropriately • Apply his/her understanding of computing to program, monitor and control his/her product • Evaluate their product considering the design criteria and the needs of the user.