The Federation of the Church Schools of Shalfleet and Yarmouth

Foundation Plans, Progression and Coverage

Design and Technology:	EYFS	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
Knowledge	**Expressive arts and design Understanding the World / Being Imaginative** **Creating through exploration:** Safely explore and use a variety of materials, tools and techniques, experimenting with design, texture, form and function. **Shaping own ideas:** Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. Children represent their own ideas, thoughts and feelings through art and stories. **Personal, Social and Emotional Development / Self Confidence and Self Awareness** Children are confident to try new activities, and say why they like some activities more than others. They are confident to speak in a familiar group, will talk about their ideas, and will choose the resources they need for their chosen activities. They say when they do or don't need help. **Communication and Language / Understanding** Children follow instructions involving several ideas or actions. They answer 'how' and 'why' questions about their experiences and in response to stories or events. **Communication and Language / Speaking**	**Design:** • Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment. • State what products they are designing and making. • Say whether their products are for themselves or other users. • Describe what their products are for. • Say how their products will work. • Say how they will make their products suitable for their intended users • Use simple design criteria to help develop their ideas **Make:** • Plan by suggesting what to do next. • Select from a range of tools and equipment, explaining their choices. • Select from a range of materials and components according to their characteristics. **Evaluate:** • What products are • Who products are for • What products are for • How products work • How products are used • Where products might be used • What materials products are made from • What they like and dislike about products **Technical Knowledge:** • The simple working characteristics of materials and components. • The movement of simple mechanisms such as levers, sliders, wheels and axles. • How freestanding structures can be made stronger, stiffer and more stable. • 3-D textiles product can be assembled from two identical fabric shapes. • Food ingredients should be combined according to their sensory characteristics.	**Design:** • Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. • Describe the purpose of their products. • Indicate the design features of their products that will appeal to intended users. • Explain how particular parts of their products work. **Make:** • Select tools and equipment suitable for the task. • Explain their choice of tools and equipment in relation to the skills and techniques they will be using. • Select materials and components suitable for the task. • Explain their choice of materials and components according to functional properties and aesthetic qualities. • Order the main stages of making. **Evaluate:** • Research inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. • Who designed and made the products. • Where products were designed and made. • When products were designed and made. • Whether products can be recycled or reused. **Technical Knowledge:** • How to use learning from science to help design and make products that work. • How to use learning from mathematics to help design and make products that work • That materials have both functional properties and aesthetic qualities. • That materials can be combined and mixed to create more useful characteristics.	**Design** • Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment • Describe the purpose of their products • Indicate the design features of their products that will appeal to intended users • Explain how particular parts of their products work • Share and clarify ideas through discussion. **Make** • Select tools and equipment suitable for the task. • Explain their choice of tools and equipment in relation to the skills and techniques they will be using. • Select materials and components suitable for the task. • Explain their choice of materials and components according to functional properties and aesthetic qualities. • produce appropriate lists of tools, equipment and materials that they need. • Formulate step-by-step plans as a guide to making. **Evaluate** • Research inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. • How much products cost to make. • How innovative products are • How sustainable the materials in products are. • What impact products have beyond their intended purpose. **Technical Knowledge** • How to use learning from science to help design and make products that work. • How to use learning from mathematics to help design and make products that work • That materials have both functional properties and aesthetic qualities. • That materials can be combined and mixed to create more useful characteristics. • That mechanical and electrical systems have an input, process and output. • The correct technical vocabulary for the projects they are undertaking.

	Children express themselves effectively, showing awareness of listeners' needs. They use past, present and future forms accurately when talking about events that have happened or are to happen in the future. They develop their own narratives and explanations by connecting ideas or events. **<u>Physical Development / Moving and Handling</u>** Children show good control and co-ordination in large and small movements. They move confidently in a range of ways, safely negotiating space. They handle equipment and tools effectively, including pencils for writing. **<u>Physical Development / Health and self-care</u>** Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe.	• The correct technical vocabulary for the projects they are undertaking. **Cooking and Nutrition:** • That all food comes from plants or animals • That food has to be farmed, grown elsewhere (e.g. home) or caught • Name and sort foods into the five groups in The eatwell plate • That everyone should eat at least five portions of fruit and vegetables every day	• That mechanical and electrical systems have an input, process and output. • The correct technical vocabulary for the projects they are undertaking. **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 a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate. • That to be active and healthy, food and drink are needed to provide energy for the body.	**Cooking and Nutrition** • That seasons may affect the food available. • How food is processed into ingredients that can be eaten or used in cooking. • That recipes can be adapted to change the appearance, taste, texture and aroma. • That different food and drink contain different substances – nutrients, water and fibre – that are needed for health.
Skills	**Design:** Use child led learning from home, school experiences and class stories to design and generate meaningful products to match children's interests. Develop and communicate their ideas to adults and peers, using adult questioning to expand children's thoughts/ideas. Make simple plans and drawings to represent ideas and share. Use technology to gain ideas and information about their project and use to record children's ideas. Make: Children use a range of materials within the indoor and outdoor classroom to construct their idea. They select tools to begin to measure out, cut and join materials. Use safely tools safely to maintain their own and other's safety. Children modify design and ideas as necessary as their model evolves. Children apply finishing touches to complete their product, considering purpose and audience.	**Design:** • Generate ideas by drawing on their own experiences. Use knowledge of existing products to help come up with ideas. • Develop and communicate ideas by talking and drawing. • Model ideas by exploring materials, components and construction kits and by making templates and mock-ups. • Use information and communication technology, where appropriate, to develop and communicate their ideas. **Make:** • Follow procedures for safety and hygiene. • Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. • Measure, mark out, cut and shape materials and components. • Assemble, join and combine materials and components. • Use finishing techniques, including those from art and design. **Evaluate:** • Talk about their design ideas and what they are making. • Make simple judgements about their products and ideas against design criteria. • Suggest how their products could be improved.	**Design:** • Gather information about the needs and wants of particular individuals and groups. • Develop their own design criteria and use these to inform their ideas. • Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. • Use computer-aided design to develop and communicate their ideas **Make:** • Follow procedures for safety and hygiene. • Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. • Measure, mark out, cut and shape materials and components with some accuracy. • Assemble, join and combine materials and components with some accuracy. • Apply a range of finishing techniques, including those from art and design, with some accuracy **Evaluate** • Identify the strengths and areas for development in their ideas and products. • Consider the views of others, including intended users, to improve their work. • Refer to their design criteria as they design and make.	**Design** • Recap LSK2 • Carry out research, using surveys, interviews, questionnaires and web-based resources. • Identify the needs, wants, preferences and values of particular individuals and groups. • Generate innovative ideas, drawing on research. • Make design decisions, taking account of constraints such as time, resources and cost. • Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. • Use computer-aided design to develop and communicate their ideas. **Make** • Follow procedures for safety and hygiene. • Use a wider range of materials and components than KS1 & LKS2, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. • Accurately measure, mark out, cut and shape materials and components. • Accurately assemble, join and combine materials and components. • Accurately apply a range of finishing techniques, including those from art and design. • Use techniques that involve a number of steps. • Demonstrate resourcefulness when tackling practical problems. **Evaluate** • Identify the strengths and areas for development in their ideas and products.

	Evaluate: With adult interactions and discussions with peers, children talk about their design and what they are making. They explain their choices of design / colour etc and demonstrate the product's use, suggesting who may use it and why. Through adult interactions and questioning, children suggest ideas of how their product could be improved or modified. **Technical Knowledge:** • See knowledge section above. **Cooking and Nutrition:** Children prepare simple dishes safely and hygienically. Through adult interactions, children consider and discuss the nutritional value of ingredients/meals and their role in supporting a healthy balanced diet. Use techniques such as cutting, peeling and grating. Observe use of machinery in process of preparing simple dishes, including blenders, mixers, toasters.	**Technical Knowledge:** • See knowledge section above **Cooking and Nutrition:** • How to prepare simple dishes safely and hygienically, without using a heat source. • To use techniques such as cutting, peeling and grating.	• Use their design criteria to evaluate their completed products. • How well products have been designed. • How well products have been made. • Why materials have been chosen. • What methods of construction have been used. • How well products work. • How well products achieve their purposes. • How well products meet user needs and wants. **Technical Knowledge** • How mechanical systems such as levers and linkages or pneumatic systems create movement. • How simple electrical circuits and components can be used to create functional products. • How to program a computer to control their products. • How to make strong, stiff shell structures. **Cooking and Nutrition** • How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. • How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	• Consider the views of others, including intended users, to improve their work. • **C**ritically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make. • Evaluate their ideas and products against their original design specification. **Technical Knowledge** • How mechanical systems such as cams or pulleys or gears create movement. • How more complex electrical circuits and components can be used to create functional products. • How to program a computer to monitor changes in the environment and control their products. • How to reinforce and strengthen a 3D framework. **Cooking and Nutrition** • How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. • How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.
Key Vocabulary	Product, plan, use/purpose, audience. Design, make, build, cut, join, all tool/resources names. Healthy, balanced diet, nutrition, body, ingredients, method, meal, recipe. Evaluate, modify, improve, share, explain.	See MTP for specific detail	See MTP for specific detail	See MTP for specific detail
Resources	**<u>Tools for idea building:</u>** Pencils, pens, long rolls of paper (wallpaper), chalk, felts. **<u>Tools for cutting and joining:</u>** saws, hammers, cutting boards, non electronic hand drills, hole punches (including single hand held hole punches), scissors, rulers, string, range of tapes, range of materials (wood, fabric, plastic – junk modelling), **<u>Cooking equipment</u>** – boards, mixing bowls, knives, cutlery, plates, wooden spoons, whisks (hand and electrical),	Resources appropriate to design, product and form. https://www.stem.org.uk/resources	Resources appropriate to design, product and form. https://www.stem.org.uk/resources	Resources appropriate to design, product and form. https://www.stem.org.uk/resources

	scales, utensils, sieve, grater, timer, blender, toaster, mixer. **<u>Resources for finishing effects:</u>** Linked to art and design resources			