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** **Design**: ● Creating through exploration: Explore and use a variety of materials, tools and techniques, experimenting with design, texture, form and function. ● Develop awareness of own and other's safety when using tools. ● Begin to formulate plans for projects, moving from ideas in heads to recorded plans. **Shaping own ideas**: ● Children explore different materials freely and represent their own ideas, thoughts and feelings by combining materials. ● Children give meaning to their projects, explaining what they are designing and its purpose. **Make**: ● Gain independence in selecting and sourcing materials and tools. ● Build understanding of which tools are for use with which materials. ● Begin to follow a logical process. ● Grow in resilience to problem solve and modify design along the way. **Evaluate**: ● Begin to understand the value of evaluations when building or making. ● Begin to verbally evaluate their own and others' projects. **Cooking and Nutrition**: ● That all food comes from plants or	**Design:** ● Design purposeful, functional, appealing products for themselves and other users based on design criteria. ● Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology **Make:** ● Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. ● Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. **Evaluate:** ● Explore and evaluate a range of existing products. ● Evaluate their ideas and products against design criteria. **Technical Knowledge:** ● Build structures, exploring how they can be made stronger, stiffer and more stable. ● Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	**Design:** ● Use research and create design rules to help plan useful and attractive products that are made for specific people or groups. ● Think of, improve, and share ideas by talking, drawing pictures with labels, making models, and using computers. **Make:** ● Choose and use different tools and equipment to do tasks like cutting, shaping, joining, and finishing carefully, giving reason for choices. ● Choose and use different materials, like building parts, fabric, and food, based on how well they work and how they look, giving reason for choices. **Evaluate:** ● Investigate and analyse a range of existing products ● Check their ideas and products against their design rules and listen to others' opinions to make their work better. ● Learn how important events and people in design and technology have changed the world, and think about whether products can be reused or recycled. **Technical Knowledge:** ● Apply their understanding of how to strengthen, stiffen and reinforce more complex structures ● Understand and use mechanical systems in their products [e.g. gears, pulleys] ● Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs etc]	**Design** ● Use research and design guidelines to create useful, attractive products that meet the needs of specific people or groups. ● Come up with ideas, improve them, and share them through discussion, detailed sketches, diagrams, models, and computer design tools. ● Explain and present how particular parts of their products work **Make** ● Choose and use a wider range of tools and equipment to carry out tasks like cutting, shaping, joining, and finishing accurately, giving reasons for choices. ● Select and use a variety of materials, such as building parts, fabric, and food ingredients, based on how they work and how they look, giving reasons for choices. ● Formulate step-by-step plans as a guide to making, including appropriate lists of tools, equipment and materials needed. **Evaluate** ● Investigate and analyse a range of existing products ● Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ● How much products cost to make and the sustainability of the materials. ● Understand how key events and individuals in design and technology have helped shape the world and whether products can be recycled or reused. **Technical Knowledge** ● Apply their understanding of how to strengthen, stiffen and reinforce more complex structures ● Understand and use mechanical systems in their products [for example, gears, pulleys] ● Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs etc] ● Apply their understanding of computing [Microbits] to program, monitor and control their products. ● Use correct technical vocabulary for the projects they undertake.

	animals ● Begin to understand origins of food e.g. from farms, the sea, made in factories, home grown. ● Begin to understand healthy food choices as part of maintaining body health.	**Cooking and Nutrition:** ● Use the basic principles of a healthy and varied diet to prepare dishes ● Understand where food comes from.	**Cooking and Nutrition:** ● That food is grown, reared and caught 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	**<u>Design</u>**: Use child led learning to design and generate meaningful products. 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. **<u>Make</u>**: Children use a range of materials within the indoor and outdoor classroom. Children 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. **<u>Evaluate</u>**: 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. **<u>Technical Knowledge</u>**: ● 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.	**Design:** ● Think of ideas from what they know, what they've seen, and other things that already exist. ● Talk about their ideas and draw pictures of them. ● Build models using materials, parts, and building kits. ● Use a computer or tablet to show and make their ideas better. **Make:** ● Follow safety rules and keep clean. ● Use different materials, like building parts, fabric, food, and tools. ● Measure, cut, and shape materials carefully. ● Combine materials and parts together to make something. ● Use finishing techniques, including those from art and design. **Evaluate:** ● Talk about their design ideas and their product. ● Make simple judgements about their products and ideas against design criteria. ● Suggest how their products could be improved. **Technical Knowledge:**	**Design:** ● Find out what different people or groups need or want. ● Create their own design rules and use them to help with their ideas. ● Use drawings, labels, and diagrams to show and explain their ideas. ● Use computer programs to help develop and share their ideas. **Make:** ● Follow procedures for safety and hygiene. ● Use a wider range of materials and components than KS1. ● 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, [colour, pattern, texture] with some accuracy. **Evaluate** ● Look at what is good about their ideas and what needs improving. ● Listen to other people's ideas, especially the users, to make their work better. ● Use their design rules while making and after finishing products. ● Think about how well the product was designed and made ● Explain why they chose certain materials and what building methods were used. ● How well the product achieves its purposes.	**Design** ● Recap LSK2 ● Research, using surveys, interviews, questionnaires and web-based resources. ● Find out what different people or groups need, want, like, and value. ● Generate innovative ideas, based on research. ● Make design choices, thinking about time, resources, and cost. ● Use annotated sketches, cross-sectional drawings, and exploded diagrams to show and explain 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. ● Accurately, mark out, measure, shape, assemble and combine materials and components. ● 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. ● Consider the views of others to improve their work. ● Critically 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.

	Use techniques such as cutting, peeling and grating. Observe use of machinery in process of preparing simple dishes, including blenders, mixers, toasters.	• 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.	**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 dishes safely and hygienically including the use of a heat source. • How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	**Technical Knowledge** • How mechanical systems such as cams or pulleys 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 dishes safely and hygienically including 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), scales, utensils, sieve, grater, timer, blender, toaster, mixer. **<u>Resources for finishing effects</u>**: Linked to art and design 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	Resources appropriate to design, product and form. https://www.stem.org.uk/resources