St Peter’s Catholic Primary Design and Technology Progression of Skills

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| Designing | KS1 | LKS2 | KS2 |
| Understanding contexts, users and purposes | Across KS1 pupils should:  • 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 | Across KS2 pupils should:  • 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 | |
| In early KS2 pupils should also:  • gather information about the needs and wants of particular individuals and groups  • develop their own design criteria and use these to inform their ideas | In late KS2 pupils should also:  • carry out research, using surveys, interviews, questionnaires and web-based resources  • identify the needs, wants, preferences and values of particular individuals and groups  • develop a simple design specification to guide their thinking |
| Generating, developing, modelling and communicating ideas | Across KS1 pupils should:  • 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 mockups  • use information and communication technology, where appropriate, to develop and communicate their ideas | Across KS2 pupils should:  • share and clarify ideas through discussion  • model their ideas using prototypes and pattern pieces  • 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 | |
| In early KS2 pupils should also:  • generate realistic ideas, focusing on the needs of the user  • make design decisions that take account of the availability of resources | In late KS2 pupils should also:  • generate innovative ideas, drawing on research  • make design decisions, taking account of constraints such as time, resources and cost |
| Making | KS1 | LKS2 | UKS2 |
| Planning | Across KS1 pupils should:  • 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 | Across KS2 pupils should:  • 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 | |
| In early KS2 pupils should also:  • order the main stages of making | In late KS2 pupils should also:  • produce appropriate lists of tools, equipment and materials that they need  • formulate step-by-step plans as a guide to making |
| Practical skills and techniques | Across KS1 pupils should:  • 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 | Across KS2 pupils should:  • 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 | |
| In early KS2 pupils should also:  • 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 | In late KS2 pupils should also:  • 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 |
| Evaluating | KS1 | LKS2 | UKS2 |
| Own ideas and products | Across KS1 pupils should:  • 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 | Across KS2 pupils should:  • identify the strengths and areas for development in their ideas and products  • consider the views of others, including intended users, to improve their work | |
| In early KS2 pupils should also:  • refer to their design criteria as they design and make  • use their design criteria to evaluate their completed products | In late KS2 pupils should also:  • 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 |
| Existing products | Across KS1 pupils should explore: • 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 | Across KS2 pupils should investigate and analyse:  • 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 | |
| In early KS2 pupils should also investigate and analyse:  • 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 | In late KS2 pupils should also investigate and analyse:  • 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 |
| Key events and individuals | Not a requirement in KS1 | Across KS2 pupils should know:  • about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products | |
| Technical Knowledge | KS1 | LKS2 | UKS2 |
| Making products work | Across KS1 pupils should know:  • about the simple working characteristics of materials and components  • about the movement of simple mechanisms such as levers, sliders, wheels and axles  • how freestanding structures can be made stronger, stiffer and more stable  • that a 3-D textiles product can be assembled from two identical fabric shapes  • that food ingredients should be combined according to their sensory characteristics  • the correct technical vocabulary for the | Across KS2 pupils should know:  • 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 | |
| In early KS2 pupils should also know:  • 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  • that a single fabric shape can be used to make a 3D textiles product  • that food ingredients can be fresh, pre-cooked and processed | In late KS2 pupils should also know:  • 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  • that a 3D textiles product can be made from a combination of fabric shapes  • that a recipe can be adapted by adding or substituting one or more ingredients |
| Cooking and Nutrition | KS1 | LKS2 | UKS2 |
| Where food comes from | Across KS1 pupils should know:  • that all food comes from plants or animals  • that food has to be farmed, grown elsewhere (e.g. home) or caught | Across KS2 pupils should know:  • 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 | |
|  | In late KS2 pupils should also know:  • that seasons may affect the food available  • how food is processed into ingredients that can be eaten or used in cooking |
| Food preparation, cooking and nutrition | Across KS1 pupils should know: • how to name and sort foods into the five groups in The eat well plate  • that everyone should eat at least five portions of fruit and vegetables every day  • how to prepare simple dishes safely and hygienically, without using a heat source  • how to use techniques such as cutting, peeling and grating | Across KS2 pupils should know:  • 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 | |
| In early KS2 pupils should also know:  • that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eat well plate  • that to be active and healthy, food and drink are needed to provide energy for the body | In late KS2 pupils should also know:  • 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 |