**St. Mary’s Church of England Primary School**

**Design and Technology skills progression**

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|  | **Key stage 1** | **Lower Key Stage 2** | **Upper Key stage 2** |
| **Design –** understanding contexts, users and purposes | * 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 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 | * 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 * gather information about needs and wants of particular individuals and groups * develop their own design criteria and use these to inform their idea | * 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 * 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 |
| **Design –** Generating, developing, modelling and communicating ideas | * 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 ICT, where appropriate, to develop and communicate their ideas | * 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 * generate realistic ideas, focusing on the needs of the user * make design decisions that take account of the availability of resource | * 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 * generate realistic ideas, focusing on the needs of the user * make design decisions that take account of the availability of resources |
| **Make –** planning | * 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 | * 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 | * 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 |
| **Make –** practical skills and techniques | * 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 | * 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 | * 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 * 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 –** own ideas and products | * 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. | * 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 * use their design criteria to evaluate their completed products | * identify the strengths and areas for development in their ideas and products * consider the views of others, including intended users, 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 |
| **Evaluate-** existing products | * Explore what products are and who or what they are for. * Explore how products work and how or where they might be used. * Explore what materials products are made from. * Explore what they like and dislike about products. | Pupils will be taught to investigate and analyse:   * how well products have been designed and made * why materials have been chosen * what methods of construction have been used * developed ground-breaking products * how well products work to achieve their purposes * how well products meet user needs and wants * who designed and made the products * where and when products were designed and made * whether products can be recycled or reused | Pupils will be taught to investigate and analyse:   * how well products have been designed and made * why materials have been chosen * what methods of construction have been used * how well products work to achieve their purposes * how well products meet user needs and wants * 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 |
| **Evaluating –** key events and individuals | N/A | * about inventors, designers, engineers, chefs and manufacturers who have | * about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products |
| **Technical skills –** Making products work | * 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 shape. * That food ingredients should be combined according to their sensory characteristics. * The correct technical vocabulary for the projects they are undertaking. | * how to use learning from science and maths 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 * use the correct technical vocabulary for the projects they are undertaking * 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 | * how to use learning from science and maths 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 * 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 –** where food comes from | * That all food comes from plants or animals. * That food has to be farmed, grown elsewhere (e.g. home) or caught. | * 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 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 seasons may affect the food available * how food is processed into ingredients that can be eaten or used in cooking |
| **Cooking and nutrition –** food preparation, cooking and nutrition | * 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. | * 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 * 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 | * 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 * 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 |