St Michael's CE Aided School
DT Curriculum Map
Progression of Knowledge and Skills

Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Physical Development Progress towards a more fluent style of moving, with developing control and grace. Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. **Expressive Arts and Design** Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills. **ELG** **Physical Development** - Fine motor skills Use a range of small tools, including scissors, paintbrushes and cutlery. **Expressive Arts and Design-** Creating with Materials Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used.	**Children will be learning about** **Mechanisms** – Sliders and Leavers **Food** – Snacks for an explorer **Structures** – Freestanding structures **Generating Ideas – Designing** Design appealing products for a particular user based on simple design criteria. Generate initial ideas and design criteria through own experiences. Develop and communicate these ideas through talk and drawings and mock ups where relevant. **Making** Select and use simple utensils, tools and equipment to perform a job e.g. peel, cut, slice, squeeze, grate and chop safely; marking out, cutting, joining and finishing; cut, shape and join paper and card. Select from a range of ingredients and materials according to their characteristics to create a chosen product. **Evaluating** Taste, explore and evaluate a range of products to determine the intended user's preferences for the product. Evaluate their ideas throughout and finished products against design criteria, including intended user and purpose. **Technical Knowledge and Understanding** **Mechanisms** Explore and use sliders and levers. Understand that different mechanisms produce different types of movement. **Food** Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. Understand and use basic principles of a healthy and varied diet to prepare dishes. Understand which foods are high in energy. **Structures** Know how to make freestanding structures stronger, stiffer and more stable.	**Children will be learning about** **Food** – Making a crumble **Mechanisms** – Wheels and axles **Textiles** – Templates and joining **Generating Ideas – Designing** Generate ideas based on simple design criteria and their own experiences, explaining what they could make. Develop, model and communicate their ideas through talking, mock-ups and drawings. **Making** Plan by suggesting what to do next. Select and use tools, equipment, skills and techniques to perform practical tasks, explaining their choices. Select new and materials, components, reclaimed materials and construction kits to build and create their products. Use simple finishing techniques suitable for the products they are creating. **Evaluating** Explore a range of existing products related to their design criteria. Evaluate their product by tasting /discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. **Technical Knowledge and Understanding** **Food** Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. Understand and use basic principles of a healthy and varied diet to prepare dishes. Start to understand flavour combinations and what they like. **Mechanisms** Explore and use wheels, axles and axle holders. Distinguish between fixed and freely moving axles. **Textiles** Understand how simple 3-D textile products are made, using a template to create two identical shapes. Understand how to join fabrics using different techniques e.g. running stitch,glue, over stitch, stapling. Explore different finishing techniques	**Children will be learning about** **Structures** – Shell structures **Mechanisms** – Levers and linkages **Food –** Healthy, varied diet **Generating Ideas – Designing** Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. Use annotated sketches, prototypes, final product sketches and pattern pieces; communication technology, such as web-based recipes, to develop and communicate ideas. Consider the work of great designers **Making** Plan the main stages of making. Select from and use a range of appropriate utensils, tools and equipment with some accuracy related to their product. Select from and use finishing techniques suitable for the product they are creating. **Evaluating** Investigate a range of 3-D textile products, ingredients and lever and linkage products relevant to their project. Test their product against the original design criteria and with the intended user. Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. **Technical Knowledge and Understanding** **Mechanisms** Understand and use lever and linkage mechanisms. Distinguish between fixed and loose pivots. **Food** Know how to use appropriate equipment and utensils to prepare and combine food. Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. Understand and combine basic flavour combinations. **Structures** Develop and use knowledge of how to construct strong, stiff shell structures. Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.	**Children will be learning about** **Mechanisms** – Pneumatics **Textiles –** 2d to 3d products **Food –** A meal for a soldier **Generating Ideas – Designing** Generate and clarify ideas through discussion with peers to develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. Consider the work of great designers **Making** Order the main stages of making. Select and use appropriate tools to measure, mark out, cut, score, shape and combine with some accuracy related to their products. Explain their choice of materials according to functional properties and aesthetic qualities. Select from and use materials and components, including ingredients, construction and electrical components according to their function and properties. **Evaluating** Investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used. Test and evaluate their own products against design criteria and the intended user and purpose. Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. **Technical Knowledge and Understanding** **Mechanisms** Understand and use pneumatic mechanisms **Textiles** Know how to strengthen, stiffen and reinforce existing fabrics. Understand how to securely join two pieces of fabric together. Understand the need for patterns and seam allowances. **Food** Know how to use appropriate equipment (including a heat source) and utensils to prepare and combine food. Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. Adjust the balance of basic flavours.	**Children will be learning about** **Structures** – Frame structures **Mechanisms** – Cams **Electrical Systems** – Control and monitoring **Generating Ideas – Designing** Generate innovative ideas through research including surveys, interviews and questionnaires.and discussion with peers to develop a design brief and criteria for a design specification. Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. Consider the work of great designers **Making** Produce detailed lists of equipment and fabrics relevant to their tasks. Write a step-by-step plan, including a list of resources required. Select from and use, a range of appropriate utensils, tools and equipment accurately to measure and combine appropriate ingredients, materials and resources. **Evaluating** Investigate and analyse products linked to their final product. Compare the final product to the original design specification and record the evaluations. Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work **Technical Knowledge and Understanding** **Structures** Understand how to strengthen, stiffen and reinforce 3-D frameworks. **Mechanisms** Understand that mechanical and electrical systems have an input, process and an output. Understand how cams can be used to produce different types of movement and change the direction of movement. **Electrical Systems** Understand and use electrical systems in their products Apply their understanding of computing to program and control their products.	**Children will be learning about** **Food** – Cook a curry **Textiles** – Make a decorated bag **Electrical Systems** – Control and monitoring **Generating Ideas – Designing** Use research using surveys, interviews, questionnaires and web-based resources to develop a design specification for a range of functional products. Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. Generate and develop innovative ideas and share and clarify these through discussion. Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. Consider the work of great designers **Making** Formulate a step-by-step plan to guide making, listing tools, equipment, materials , utensils, ingredients and components. Competently select from and use appropriate tools, utensils and equipment to accurately measure, mark, cut and assemble materials /ingredients, and securely connect electrical components to produce reliable, functional products. Use finishing and decorative techniques suitable for the product they are designing and making. **Evaluating** Continually evaluate and modify the working features of the product to match the initial design specification. Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. • Test the system to demonstrate its effectiveness for the intended user and purpose. **Technical Knowledge and Understanding** **Food** Know how to use utensils and equipment including heat sources to prepare and cook food. Understand about seasonality in relation to food products and the source of different food products. Use seasoning and ingredient to adjust flavours. Know and use good flavour combinations. **Textiles** Produce a 3-D textile product from a combination of accurately made pattern pieces, fabric shapes and different fabrics. Understand how fabrics can be strengthened, stiffened and reinforced where appropriate. **Electrical Systems** Understand and use electrical systems in their products. Apply their understanding of computing to program and control their products. Understand the use of electrical components.

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