

St George's Central CE Primary School and Nursery

Progression in Design Technology

Designing				
Nursery	Reception	Year 1/Year 2	Year 3/Year 4	Year 5/Year 6
<p><u>2 – 3 year olds</u></p> <ul style="list-style-type: none"> Use their imagination as they consider what they want to do and can do with different materials. <p><u>3 – 4 year olds</u></p> <ul style="list-style-type: none"> Explore different materials freely, in order to develop their ideas about how to use them and what to make. 	<ul style="list-style-type: none"> Children discuss and think about what they want to make. Refine their ideas and discuss the problems that may arise and how they may be solved. 	<ul style="list-style-type: none"> Generate ideas based on simple design criteria and their own experiences, explaining what they could make. Develop, model and communicate their ideas through talking, templates, mock-ups, information technology and drawings. Design a functional and appealing product for a chosen user and purpose based on simple design criteria. Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. 	<ul style="list-style-type: none"> Generate and clarify ideas through discussion with peers and adults to develop realistic design criteria including appearance, taste, texture and aroma for an appealing, functional product for a particular user and purpose. Use annotated sketches, prototypes and appropriate information and communication technology, such as web-based recipes, to develop, model and communicate ideas. Produce annotated sketches, prototypes, cross sectional and exploded diagrams, final product sketches and pattern pieces. Gather information about needs and wants, and analyse existing products to inform designs. 	<ul style="list-style-type: none"> Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. Generate, develop and model a range of innovative ideas, through research, discussion, prototypes, templates, information and communication technology, exploded diagrams and annotated sketches. Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost. Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.

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				<ul style="list-style-type: none"> Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.
Making				
Nursery	Reception	Year 1/Year 2	Year 3/Year 4	Year 5/Year 6
<p><u>2 – 3 year olds</u></p> <ul style="list-style-type: none"> Manipulate and play with different materials. Make simple models which express their ideas. Begin to use a few tools to help them achieve a desired result. <p><u>3 – 4 year olds</u></p> <ul style="list-style-type: none"> Develop their own ideas and then decide which materials to use to express them. Join construction pieces together to build and balance. Join different materials and explore different textures. 	<ul style="list-style-type: none"> Construct with a range of materials. Create collaboratively sharing ideas, resources and skills. Use different techniques for joining materials. Use a range of tools and use them with care and precision. 	<ul style="list-style-type: none"> Plan by suggesting what to do next. Select new and reclaimed materials, textiles, card, plastic, wood and construction kits, according to their characteristics to create or build their products. Use simple finishing techniques suitable for the products they are creating. Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing and explain their choices. Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. 	<ul style="list-style-type: none"> Plan and order the main stages of making. Select from and use appropriate tools with some accuracy to measure, cut, shape, score and join paper, card, wood, plastic and other construction materials. Select from and use finishing techniques suitable for the product they are creating. Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select and use appropriate utensils and equipment to prepare and combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. 	<ul style="list-style-type: none"> Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make a range of products. Use finishing and decorative techniques suitable for the product they are designing and making. Write a step-by-step recipe, including a list of ingredients, equipment and utensils Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. Make, decorate and present the food product appropriately for the intended user and purpose. Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. If appropriate accurately assign tasks within a team.

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			<ul style="list-style-type: none"> • Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities. • Explain their choice of materials according to functional properties and aesthetic qualities. 	<ul style="list-style-type: none"> • Competently select, accurately assemble, and securely connect electrical components to produce a reliable, functional product. • Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment. • Make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.
Evaluating				
Nursery	Reception	Year 1/Year 2	Year 3/Year 4	Year 5/Year 6
<p><u>2 – 3 year olds</u></p> <ul style="list-style-type: none"> • Explore materials/resources finding out what they are/what they can do and what works best. <p><u>3 – 4 year olds</u></p> <ul style="list-style-type: none"> • Talk about what they have made and if it has worked and how it could be adapted or made better. 	<ul style="list-style-type: none"> • Reflect with the children about what they have made, what has worked well and whether it is fit for purpose. • Return to and build on their previous learning, refining ideas and developing their ability to represent them successfully. 	<ul style="list-style-type: none"> • Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings. • Evaluate their ideas throughout and their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. • Explore and evaluate a range of existing textile products relevant to the project being undertaken. • Explore a range of existing books and everyday products that use simple sliders and levers. 	<ul style="list-style-type: none"> • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using tables and simple graphs. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others identify the strengths and areas for improvement in their work. • Investigate and analyse books and, where available, other products with lever and linkage mechanisms. 	<ul style="list-style-type: none"> • Investigate and evaluate a range of existing frame structures. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development that take others ideas into account, and carrying out appropriate tests. • Research key events, companies and individuals relevant to their product • Understand how key chefs have influenced eating habits to promote varied and healthy diets.

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		<ul style="list-style-type: none"> Explore and evaluate a range of products with wheels and axles. Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. Evaluate ideas and finished products against design criteria, including intended user and purpose. 	<ul style="list-style-type: none"> Investigate a range of 3-D textile products relevant to the project. Test their product against the original design criteria and with the intended user. Understand how a key event/individual has influenced the development of the chosen product and/or fabric. Investigate and analyse a range of existing battery powered products. 	<ul style="list-style-type: none"> Continually evaluate and modify the working features of the product to match the initial design specification. Investigate and analyse textile products linked to their final product. Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams.
Technical Knowledge and Understanding				
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<p><u>2 – 3 year olds</u></p> <ul style="list-style-type: none"> Choose the right tools for the desired effect e.g. A rolling pin to flatten the playdough. <p><u>3 – 4 year olds</u></p> <ul style="list-style-type: none"> Know which tool is needed e.g. when scissors are needed to cut the card, material, paper to achieve a desired result. 	<ul style="list-style-type: none"> When constructing decide which technique for joining would work best with the materials being used. Understand how to safely use a variety of tools when constructing and know what the tools can do. 	<ul style="list-style-type: none"> Explore and use sliders and levers. Understand that different mechanisms produce different types of movement. Know and use technical vocabulary relevant to the project. Know how to make freestanding structures stronger, stiffer and more stable. 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. 	<ul style="list-style-type: none"> Understand and use lever and linkage mechanisms. Distinguish between fixed and loose pivots. 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. Know and use relevant technical and sensory vocabulary appropriately. Know how to strengthen, stiffen and reinforce existing fabrics. Understand how to securely join two pieces of fabric together. 	<ul style="list-style-type: none"> Understand how to strengthen, stiffen and reinforce 3-D frameworks. 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. Know and use relevant technical and sensory vocabulary Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products.

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		<ul style="list-style-type: none"> • Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. • 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, including how fruit and vegetables are part of the 'Eatwell Plate'. • Explore and use wheels, axles and axle holders. • Distinguish between fixed and freely moving axles. 	<ul style="list-style-type: none"> • Understand the need for patterns and seam allowances. • Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. • 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. 	<ul style="list-style-type: none"> • A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate • Understand that mechanical and electrical systems have an input, process and an output. • Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.
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