



St John's COE Primary School
Progression in Design and Technology 2020 -2021
Creative Tomorrows are Designed Today



YEAR R

Based on EYFS Physical Development, Understanding the World and Expressive Arts and Design
 Children can:

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology art, music dance, role play and stories.
- Handle equipment and tools effectively including pencils for writing.

	YEARS 1 and 2	YEARS 3 and 4	YEARS 5 and 6
Designing	<ul style="list-style-type: none"> • Generate initial ideas, simple designs and appealing products for a particular user through talking and using own experiences. • Develop and communicate ideas through drawings and mock-ups. 	<ul style="list-style-type: none"> • Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Develop ideas using existing products to produce annotated sketches, prototypes, final product sketches and pattern pieces to develop, model and communicate ideas. • Use appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. 	<ul style="list-style-type: none"> • Generate innovative ideas by carrying out research including surveys, interviews and questionnaires. • Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design. • Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification • Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.

<p style="text-align: center;">Making</p>	<ul style="list-style-type: none"> • Select from and use a range of tools, equipment and utensils to perform tasks such as cutting and joining to allow movement and finishing, peeling, slicing, squeezing, grating and chopping. • Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics. • 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 and use a range of appropriate tools with some accuracy to include those for cutting, joining, measuring and scoring. • Select materials, fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. • 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. 	<ul style="list-style-type: none"> • Produce detailed lists of equipment and fabrics relevant to their tasks. • Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to accurately measure, mark out, make and finish products that are accurately assembled and well finished. • Work within the constraints of time, resources and cost.
<p style="text-align: center;">Evaluating</p>	<ul style="list-style-type: none"> • Explore a range of everyday products that use simple sliders and levers. wheels and axles and free-standing structures • Evaluate their ideas and finished product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria. 	<ul style="list-style-type: none"> • Investigate a range of existing 3-D textile products, books and shell structures relevant to the projects. • Test and evaluate their product against the original design criteria, purpose and user's needs. • Take into account others' views. • Understand how a key event/individual has influenced the development of the chosen product and/or fabric. • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. 	<ul style="list-style-type: none"> • Investigate and analyse textile products or frame structures linked to their final product. • 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. • Research key events and individuals relevant to frame structures. • Investigate famous inventors who developed ground-breaking electrical systems and components. • Investigate famous manufacturing and engineering companies relevant to the project. • Understand and use electrical systems in their products. • Apply their understanding of computing to program, monitor and control their products.

Technical Knowledge and Understanding

- Understand that different mechanisms produce different types of movement.
- Know how to make freestanding structures stronger, stiffer and more stable.
- Distinguish between fixed and freely moving axles.
- Know and use technical and sensory vocabulary relevant to the project.
- 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*.

- Know how to strengthen, stiffen and reinforce existing fabrics, materials and shell structures.
- Understand how to securely join two pieces of fabric and other materials together.
- Understand the need for patterns and seam allowances.
- Understand and use lever and linkage mechanisms.
- Distinguish between fixed and loose pivots.
- Know and use technical and sensory vocabulary relevant to the project.
- Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.
- 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 that a 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.
- Fabrics and 3D frameworks 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.
- Know and use technical vocabulary relevant to the project