

St Andrew's CE Junior School

Design and Technology Overview of Subjects Covered 2024-5

DT Coverage

	Year 3	Year 4	Year 5	Year 6
Cooking and Nutrition	x	x	x	x
Electrical Systems		x		x
Textiles	x		x	
Structures and Frames	x		x	
Mechanisms		x		x

Quick overview of projects and coverage

	Autumn	Spring	Summer
Year 3	Textiles Stary Night	Structures (Shell) Biscuit box	Cooking and Nutrition Salad – Healthy eating and the 5 food groups
Year 4	Cooking and Nutrition Sandwiches	Electrical System Nightlight	Mechanism (Pneumatic) Volcano
Year 5	Textiles Wallet	Structures (Frame) Bird box model	Cooking and Nutrition Soup - seasonality
Year 6	Cooking and Nutrition Fair Trade Christmas Cookies	Mechanisms (Cams) Moving Children's toy	Electrical Control Tamagochi

	Autumn –	Spring –	Summer –
Year 3	Textiles (Art and Topic link) Create their own ‘Starry Sky’ using a range of materials and techniques such as sewing, weaving, gluing and layering. Key learning • Produce annotated sketches, prototypes, final product sketches and pattern pieces. • Select fabrics and fastenings according to their functional characteristics. • Test and evaluate their products. • Practical skills explicitly taught – fastening and the running stitch.	Structures – shell structures Create their own shell structure biscuit box Key Learning • Use annotated sketches and proto types to develop, model and communicate ideas. • Understand a range of technical knowledge of a variety of techniques to strengthen card. • Apply knowledge of shape and nets to their design process. • Select materials and components suitable for the task • Explain their choice of materials and components according to functional and aesthetic properties.	Cooking and Nutrition Design and make a healthy salad. -What is a balanced diet? Key leaning • Understand the five major food groups. • Understand that a healthy and balanced diet is consuming foods from across these major groups.- The Eatwell Guide is a good example • Taste and evaluate a variety of ingredients which could be used in a salad. • Create, plan, prepare and cook a salad which they would consider ‘healthy’. • Practical skills will be explicitly taught which include – cutting, slicing, chopping, grating, measuring. • Evaluate their product based on their design criteria.
Year 4	Cooking and Nutrition Design and cook a sandwich. -Where does food come from? Key learning	Electrical Systems Design and build a battery powered nightlight Key Learning	Mechanisms – pneumatics (Geography link) Build a mini volcano which uses pneumatics to erupt. Key Learning

	• Generate ideas and develop design criteria for an appealing product for a use and purpose. • Plan the main stages of a recipe, listing ingredients, utensils and equipment. • Select from a range of ingredients to make appropriate food products. • Know a range of appropriate ingredients, and whether they are grown, reared or caught. • Understand the technical knowledge that that food ingredients can be fresh, pre-cooked and processed. • Practical skills will be explicitly taught which include – cutting, slicing, chopping, grating, measuring • Evaluate their product based on their own design criteria. Sandwiches in DT folder (Design Society)	• Develop a design specification for a functional product that responds using a switch of their own design. • Use CAD to design a prototype of their product -evaluate the effectiveness of this design based on their design specification. • Understand technical knowledge of how simple electrical circuits and components can be used to create functional products. • Formulate a step - by- step plan to making, listing tools, equipment, materials and components. • Test and evaluate the system to demonstrate its effectiveness for the intended user and purpose.	• Use annotated sketches and proto types to develop, model and communicate ideas. • Develop a design specification for a functional product based on the needs of a particular group. • Select and use tools with some accuracy to cut, shape and join paper and card to attach the pneumatic equipment. • Understand technical knowledge of how pneumatic systems create movement • Refer to their design specification as they design and create.
Year 5	Textiles Designing and making wallets Key learning • Generate innovative ideas through research and develop these using mock-ups and prototypes. • Evaluate a range of existing products based on how well they have been made and designed and which materials have been used.	Frames and Structures Design and make a bird house Key leaning • Research user needs and existing products and develop and model innovative ideas into a design specification. • Make design decisions, taking account of constraints such as time, resources and cost.	Cooking and Nutrition Design and make a seasonal soup -Understand that certain ingredients in Britain are seasonal Key leaning - Understand seasonal foods in Britain. - Identify the needs, wants, preferences and values of particular individuals and groups. Develop a simple design specification based on this.

	- Design functional, appealing products for the intender user that are fit for purpose based on a simple design specification. - Accurately assemble, join and combine materials and components while selecting from a range of known stitches. - Select and use a range of tools and equipment, to make products that are accurately assembled and well finished. - Understand the technical knowledge that a single fabric shape can be used to make a 3D textiles product	- Formulate a plan with a step- by- step of tasks and resources. - Use tools to accurately measure, mark out, cut, shape and join materials to make frameworks. - Critically evaluate their products against their design specification.	- Understand that a recipe can be adapted by adding or substituting one or more ingredients - Critically evaluate their ideas and products against their original design specification - Practical skills will be explicitly taught which include – cutting, slicing, chopping, grating, measuring, mixing
Year 6	Cooking and Nutrition Fairtrade Christmas Cookies Key learning - Generate and explore innovative ideas through research and discussion to develop a design specification. - Understand the requirements of health and safety and hygiene in a professional cooking environment. - Write a step-by-step recipe, including a list of ingredients, equipment and utensils. - Using appropriate utensils and equipment accurately, make,	Mechanisms - Cams Design, make and evaluate a moving children's toy. Key learning - Research user needs and existing products. Develop and model innovative ideas into a design specification. - Formulate a plan with a step- by- step of tasks and resources. - Understand technical knowledge of how cam systems create a variety of movements. - Use tools to accurately measure, mark out, cut, shape and join materials to make frameworks.	Electric Circuits Control Technology – Using Micro Bits (we have a class set of 30. A Tamagotchi.  Key learning

	decorate and present a food product for the intended user and purpose. • Evaluate a range of relevant products and ingredients and the final product with reference to the design brief and specification. • Understand the source of different food products including Fair Trade. • Practical skills will be explicitly taught which include – cutting, slicing, chopping, grating, measuring, mixing	• Critically evaluate their products against their design specification.	• Develop a design specification for a functional product that responds using controlled technology. • Formulary a step - by- step plan to making, listing tools, equipment, materials and components. • Test and evaluate the system to demonstrate its effectiveness for the intended user and purpose. • Understand the technical knowledge of more complex electrical systems can be used to create a product. • Accurately assemble, join and combine materials and components
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