

Succeeding together - fostering a love of learning, within a nurturing Christian community, to bring out 'the best in everyone'.

Design Technology Long Term Overview

EYFS	<p>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.</p> <p>Physical Development Fine Motor Skills • Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases. • Use a range of small tools, including scissors, paintbrushes and cutlery. • Begin to show accuracy and care when drawing</p> <p>Personal, Social and Emotional Development Managing Self • Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p>		
		Autumn Cycle A – On the Move	Spring Cycle A – Healthy Heroes
Year 1 & 2	<p>Design a boat that floats</p> <ul style="list-style-type: none"> • Design purposeful, appealing products based on design criteria. • Generate, develop, model and communicate their ideas through talk and drawings. • Select from and use a range of tools and equipment to perform practical tasks. • Select from a wide range of materials according to their characteristics. • Evaluate their designs. • Build structures, exploring how they can be made stronger, stiffer and more stable. <p>Visit to Transport museum and links to history.</p> <ul style="list-style-type: none"> • Compare first car (Benz) at museum and visit from Alpine F1 to discuss design today. • Explore how boats, cars and trains have changed over time 	<p>Design, prepare and evaluate soup and bread rolls for a Parents event to link with English text and Science.</p> <ul style="list-style-type: none"> • Select from a range of tools and equipment to perform practical tasks. • Safety in the kitchen (the claw grip.) • Explore and evaluate a range of existing products. • Evaluate their products against design criteria. • Apply the principals of nutrition and healthy eating to prepare dishes (Eatwell plate.) • Understand where food comes from. • Hygiene principals 	

Autumn Cycle B – Around the world**Textiles – Design a Christmas Decoration**

- Design purposeful, functional, appealing products based on design criteria.
- Develop, communicate ideas through talking, sketches and drawings.
- Select tools and techniques explaining choices.
- Join fabrics using different joining techniques e.g. running stitch, over stitch, gluing, stapling.
- Know how simple textile products are made, use a template to create two identical shapes.
- Explore finishing techniques (embellishments etc.)
- Evaluate against the design criteria.

Spring Cycle B – Fire! Fire!**Make a vehicle (wheels and axels)**

- Know what wheels and axels are and the purpose.
- Distinguish between fixed and freely moving axles.
- Design purposeful products based on design criteria.
- Generate, develop, model and communicate their ideas through talk mock- ups and drawings.
- Select from and use a range of tools and equipment to perform practical tasks.
- Select from a wide range of materials according to their characteristics.
- Evaluate their designs.
- History link – changes to fire engines.

Summer Cycle B – Roald Dahl**Freestanding Structures**

- Generate ideas based on simple design criteria and my own experiences.
- Develop, model and communicate ideas through talking, mock-ups and drawings.
- Select tools and techniques explaining choices.
- Know how to make freestanding structures stiffer and stronger and more stable.
- Apply knowledge gained about how to make structures stronger in own work. For example, by using a triangle shape or struts.
- Know what an architect is.
- Explore the work of Gaudi, Hundertwasser, Frank Gehry, Norman Foster.

Year	Autumn Cycle A – The Groovy Greeks	Spring Cycle A – Our World	Summer Cycle A – The Brave & the Bold
3 & 4	<p data-bbox="248 212 792 244">Electrical Systems (Taught in Science)</p> <ul data-bbox="297 252 887 320" style="list-style-type: none"> <li data-bbox="297 252 887 284">• <i>Know the key features of electrical safety.</i> <li data-bbox="297 288 887 320">• <i>Know how to create an electrical circuit.</i> 	<p data-bbox="898 212 1122 244">Shell Structures</p> <ul data-bbox="943 252 1525 1134" style="list-style-type: none"> <li data-bbox="943 252 1525 395">• Generate, develop, model and communicate ideas through discussion, annotated sketches, exploded diagrams and prototypes. <li data-bbox="943 400 1525 432">• Identify shell structures. <li data-bbox="943 437 1525 544">• Explore real life examples of buildings using a shell structure such as The Shard and O2. <li data-bbox="943 549 1525 655">• Understand how key events and individuals in design and technology have helped shape the world. <li data-bbox="943 660 1525 799">• Explain how a shell structure is formed and give examples of ways in which the structure can be reinforced and strengthened. <li data-bbox="943 804 1525 879">• Know and use technical vocabulary relating to structures. <li data-bbox="943 884 1525 991">• Create simple 3D shell structures from 2D nets and designs and explore the different ways these can be assembled. <li data-bbox="943 995 1525 1102">• Evaluate how effective their shell structures are in terms of stability/strength and structure. <li data-bbox="943 1107 1525 1134">• Use CAD to design nets. 	<p data-bbox="1538 212 1852 244">Cooking and Nutrition</p> <ul data-bbox="1583 284 2175 1007" style="list-style-type: none"> <li data-bbox="1583 284 2175 316">• Plan a meal according to a design criteria. <li data-bbox="1583 320 2175 427">• Understand and apply the principals of a healthy and varied diet (Eatwell plate, food groups.) <li data-bbox="1583 432 2175 491">• Plan the main stages of a recipe, listing ingredients, utensils and equipment. <li data-bbox="1583 496 2175 603">• Understand the source, seasonality and characteristics of a broad range of ingredients. <li data-bbox="1583 608 2175 639">• Cook savoury dishes. <li data-bbox="1583 644 2175 767">• Understand cooking techniques, selecting ingredients, preparing ingredients safely and hygienically, using utensils and some electric equipment. <li data-bbox="1583 772 2175 804">• Claw grip and bridge hold. <li data-bbox="1583 809 2175 868">• Learn about seasoning and adapting recipes. <li data-bbox="1583 873 2175 904">• Research and analyse existing products. <li data-bbox="1583 909 2175 1007">• Evaluate their ideas and products against design criteria and consider the views of others to improve work.

Mechanisms (levers and linkages)

- Explore and used mechanisms such as flaps, sliders and levers.
- Explore every day levers (such as a can ring pull or a spade as well as linkages, window hinge, fold up clothes airer etc.)
- Understand use lever and linkage mechanisms.
- Distinguish between fixed and loose pivots.
- Generate, develop, model and communicate ideas through discussion, annotated sketches, prototypes.
- Investigate and analyse a range of existing books and, where available, other products with lever and linkage mechanisms
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- Order the main stages of making.
- Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.
- Use finishing techniques suitable for the product they are creating.

Textiles

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups,
- Generate, develop, model and communicate ideas through discussion, annotated sketches, prototypes samples and pattern pieces.
- Select materials and components based on functional and aesthetic properties.
- Select tools and techniques explaining choices.
- Join fabrics using different joining techniques e.g. running stitch, over stitch, gluing, stapling.
- Explore finishing techniques (embellishments etc.)
- Know the need for a pattern and seam allowance.
- Evaluate against the design criteria, taking the views of others into account.

Years	Autumn Cycle A – Whose War?	Spring Cycle A – Evolution & Inheritance	Summer Cycle A - Shakespeare
5 & 6	<p>Frame structures</p> <ul style="list-style-type: none"> • Use carpentry equipment appropriately and safely. • Saw lengths of wood to create a frame Know how frames are strengthened, reinforced and made rigid. • Explore real life examples where a truss, gussets mitres and braces have been used such as Iron Bridge constructed by Abraham Darby. • Recognise that triangles are the most suitable shape to create gussets and braces to reinforce joins in a frame. • Explore Anderson and Morrison shelters used in World War II and consider what was needed in these structures to ensure stability. • Generate, develop, model and communicate ideas through discussion, annotated sketches, cross sectional diagrams and prototypes. • Evaluate their designs against design criteria and make modifications after evaluation if necessary. 		<p>Cooking and Nutrition</p> <ul style="list-style-type: none"> • Plan a meal according to a design criteria. • Understand and apply the principals of a healthy and varied diet (Eatwell plate, food groups.) • Plan a recipe, listing ingredients, utensils and equipment. • Understand the source, seasonality and characteristics of a broad range of ingredients. • Research packaging design and evaluate existing examples, considering choice of colour, font, materials, size and functionality. • Understand cooking techniques, selecting ingredients, preparing ingredients safely and hygienically, using utensils, electric equipment including heat sources to cook food. • Claw grip and bridge hold. • Learn about seasoning and adapting recipes. • Carry out sensory evaluations of a range of existing relevant products and ingredients. Record the evaluations (using tables graphs, charts and computing where appropriate.) • Evaluate their ideas and products against design criteria and consider the views of others to improve work. • Understand how key chefs have influences eating habits to promote varied and healthy diets.

	Autumn Cycle B – Super Settlers	Spring Cycle B – We are Astronomers	Summer Cycle B – Ancient Civilizations
	<p>Mechanisms (Pulleys and Gears)</p> <ul style="list-style-type: none"> • Know that mechanical and electrical systems have an input, process and an output. • Know that gears and pulleys can be used to speed up, slow down or change the direction of movement. • Select from a range of tools, materials and equipment to make products that are accurately assembled and well finished. Work within the restraints of time, resources and cost. • Generate, develop, model and communicate ideas through discussion, annotated sketches, cross sectional diagrams and prototypes. • Evaluate their designs against design criteria and make modifications after evaluation if necessary. 		<p>Textiles</p> <ul style="list-style-type: none"> • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups, • Generate, develop, model and communicate ideas through discussion, annotated sketches, prototypes samples and pattern pieces. • Know how technological advancements have changed and influences the textile industry. • Consider the environmental impact of the textile industry and sustainability. • Select materials and components based on functional and aesthetic properties. • Know that a 3-D textile product can be made from a combination of pattern pieces, fabric shapes and different fabrics. • Select tools and techniques explaining choices. • Join fabrics using different joining techniques e.g. running stitch, over stitch, gluing, stapling. • Explore finishing techniques (embellishments etc.) • Know the need for a pattern and seam allowance. • Evaluate against the design criteria, taking the views of others into account.

'I can do everything through Him who gives me strength.' Philippians 4:13