Cheddon Fitzpaine Church School

Our Learning in Design and Technology

Our broad, inspiring and ambitious curriculum is designed to develop confident, happy and curious individuals who flourish through perseverance and a love of learning. This reflects our vision of 'where we all belong, believe in ourselves and others, and build for our future.'

Our Design and Technology curriculum intent:

- Children develop their knowledge of design technology through collaborative approaches.
- Children become critical thinkers and problem solvers
- Children learn how to investigate and evaluate approaches before drawing conclusions and becoming informed designers and engineers.

Design and Technology Subject Overview:

Class 1& 2 – Year R, 1 & 2

	Autumn	Spring	Summer
Cycle A	**Sewing** Fabric Bunting	**Construction** Moving pictures	**Cooking** Salad Making
Cycle B	**Construction** Design and Make a Toy with moving levers	**Sewing** Design and create a nurse's hat	**Cooking** Comparing food throughout different eras.
Cycle C	**Construction** Build a carnival float	**Construction** Making a hot air balloon	**Sewing** Make a life jacket

Class 3 – Year 2 & 3

	Autumn	Spring	Summer
Cycle A	**Sewing** The invention of the needle Tunic Decoration	**Construction** Catapults.	**Cooking** Paella linked to Spanish
Cycle B	**Cooking** Stew and bread	**Sewing** Cross Stitch Whole Class Tapestry	**Construction** Gas Mask Box

Class 4 & 5 – Year 4,5 & 6

	Autumn	Spring	Summer
Cycle A	**Construction** Pyramids using a pully system	**Construction / Cooking** Greek Food Moon buggies	**Construction** STEM building bridges
Cycle B	**Cooking** Make a chocolate box and chocolates	**Construction** Aqueducts	**Sewing** Upcycling Clothing
Cycle C	**Construction** Iron Age house for a class settlement village (sticks / fabric, mud etc)	**Construction** Viking Long Boats, complex structures	**Cooking** Royal Banquet

Skills as a designer and engineer				
	EYFS	**KS1**	**LKS2**	**UKS2**
Research	▪ Use pictures and books as a reference tool for designs.	▪ Children safely use and explore a variety of materials, tools and techniques ▪ Children experiment with colour, design, texture, form and function. ▪ Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. ▪ Begin to draw on their own experience to help generate ideas and research based on set criteria. ▪ Begin to understand the development of existing products ▪ Explain what they are for, how they work, what materials have been used. ▪ When looking at existing products explain what they like and dislike about the products and why.	▪ Children safely use and explore a variety of materials, tools and techniques, ▪ Children experiment with colour, design, texture, form and function. ▪ Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. ▪ Children represent their own ideas, thoughts and feelings through design and technology. ▪ Begin to understand how to identify a target group for what they intend to design and make based on a design criteria. ▪ Identify a purpose and establish criteria for a successful product. ▪ Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. ▪ discuss how well products have been designed, made, what materials have been used and the construction technique. ▪ Begin to disassemble and evaluate familiar products and consider the views of others to improve them ▪ Begin to evaluate how the key designs of individuals in design and technology have helped shape the world.	▪ Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. ▪ Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. ▪ Children represent their own ideas, thoughts and feelings through design and technology. ▪ Produce a range of ideas after collecting information ▪ Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. ▪ Use market research to inform plans
Key vocabulary	design	design designer	engineer graphic designer textile designer	fashion designer ethical product corporate social responsibility

Designing	▪ Gain confidence in representing their ideas. ▪ Explain what they are going to make and which materials they will use. ▪ Select and name the tools needed to work the materials e.g. scissors for paper.	▪ Talk about what they want to make, in relation to the design brief and their research. ▪ Draw a labelled picture of their product, which may include parts, components, and materials. ▪ Choose the materials/tools they will use, from a selection. ▪ Write a list of the materials/ ingredients/tools they will need. ▪ develop their design ideas through discussion, observation, drawing and modelling. ▪ Identify a purpose for what they intend to design and make. ▪ Start to suggest ideas and explain what they are going to do. ▪ Begin to develop their ideas through talk	▪ Start to generate ideas, considering the purposes for which they are designing- link with Mathematics and Science. ▪ Confidently make labelled drawings from different views showing specific features, explaining their choice of materials and components according to function and aesthetic. ▪ Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. ▪ When planning, consider the views of others (including intended users) to improve their work. ▪ Produce a plan and explain it to others. ▪ Consider how to present their product in an interesting way. ▪ Make templates and mock ups of their ideas in card and paper or using ICT (if relevant).	▪ Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. ▪ Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD. ▪ Put together a step-by-step plan which shows the order and also what equipment and tools they need. ▪ Draw up a specification for their design- link with Mathematics and Science. ▪ Plan the order of their work, choosing appropriate materials, tools and techniques. ▪ Use results of investigations, information

		and simple drawings. ▪ Explain how they intend to fix simple materials. ▪ Develop their own ideas from given starting points.		sources, including ICT when developing design ideas. ▪ Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. ▪ Explain how their product will appeal to the audience. ▪ With growing confidence, apply a range of finishing techniques, including those from art and design.
Key Vocabulary	materials tools construct	materials tools brief product label technology problem solving	packaging product shelf -appeal	intended user design criteria Cross- sectional diagram diagram innovation

Construction	▪ Start to build structures, joining components together. ▪ Begin to use scissors to cut straight and curved edges and hole pinches to punch holes. ▪ Explore using/ holding basic tools such as a saw or hammer. ▪ Use adhesives to join material.	▪ Explore using tools e.g. scissors and a hole punch safely. ▪ Use correct vocabulary to name and describe tools. ▪ With help measure, mark out, cut and shape a range of materials. ▪ Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. ▪ Begin to use simple finishing techniques to improve the appearance of their product. ▪ Measure materials to use in a model or structure. ▪ Make a product which moves. ▪ Attempt to make their model stronger if it needs to be. ▪ Begin to build structures, exploring how they can be made stronger, stiffer and more stable. ▪ Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	▪ Begin to select tools and materials; use correct vocabulary to name and describe them. ▪ Select a wider range of tools and techniques for making their product safely. ▪ Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. ▪ Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, food ingredients, mechanical components and electrical components. ▪ Explain their choice of tools and equipment in relation to the skills and techniques they will be using. ▪ Measure, mark out, cut, score and assemble components with more accuracy. ▪ Start to work safely and accurately with a range of simple tools. ▪ Make choices of material both for its appearance and qualities. ▪ Work accurately to make cuts and holes – e.g. to measure and then use equipment to cut. ▪ Try alternative ways of fixing something if the first attempt is not successful. ▪ Use a glue gun with close supervision (one to one). ▪ Understand how to reinforce and strengthen a 3D framework. ▪ Create and use simple gears, pulleys, cams, levers and linkages. ▪ Build models incorporating circuits with buzzers and bulbs. ▪ Make a product which uses both electrical and mechanical components. ▪ Use pulleys, levers and linkages in their product ▪	▪ Select appropriate materials, tools and techniques e.g. cutting, shaping, joining and finishing, accurately. ▪ Use tools safely and accurately. ▪ Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. ▪ measure and mark Use a range of tools and equipment expertly. ▪ Make up a prototype first. ▪ Measurement accurately to ensure that everything is precise. ▪ Demonstrate motivation/perseverance to refine and improve their products. ▪ Use a glue gun with close supervision. ▪ Use a craft knife, cutting mat and safety ruler with close supervision (one to one). ▪ Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. ▪ Demonstrate how to use skills in using different tools and equipment safely and accurately ▪ Demonstrate when make modifications as they go along. ▪ Understand how mechanical systems such as cams or pulleys or gears create movement. ▪ Incorporate switches to turn on and off into models made out more accurately.
Sewing		▪ Join fabric using a running stitch, glue and tape ▪ Use basic sewing techniques.	▪ Start to measure, tape or pin, cut and join fabric with some accuracy. ▪ Now sew using a range of different stitches ▪ Join fabrics using a running stitch.	▪ Create a 3D product using a range of materials and sewing techniques. ▪ With confidence pin, sew and stitch materials together to create a product. ▪ Combine fabric to make a high quality product for a purpose.
Cooking	▪ Explore measure and weight using non-standard measures (e.g. spoons and cups)	▪ Measure and weigh food items using non-standard measures (e.g. spoons and cups). ▪ Use techniques such as cutting, peeling and grating. ▪ work safely and hygienically.	▪ Begin to weigh and measure using standards weights (time, dry ingredients, and liquids). ▪ understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	▪ Weigh and measure accurately (time, dry ingredients, and liquids). ▪ Demonstrate increasing confidence in how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.

Key Vocabulary	CONSTRUCTION Make Cut Join strong COOKING ingredients healthy cook taste cut	CONSTRUCTION SEWING textiles needle thread pin pattern piece applique COOKING ingredients healthy cook taste cut	CONSTRUCTION net score accuracy SEWING pattern piece running stitch cross stitch applique embroidery COOKING hygiene grown reared Local producer seasonal produce	CONSTRUCTION frame structure strengthen reinforce SEWING Pattern pieces back stitch tension seam allowance turn out fastener COOKING hygiene cross contamination local produce seasonality cooking technique deconstructed
Evaluating Evaluating processes and products	Communicate their design ideas as they develop.	▪ Communicate a range of design ideas and reasons for their design. ▪ Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria). ▪ Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make next time.	▪ Evaluate their work both during and at the end of the assignment; suggest some improvements and say what was good and not so good about their original design. ▪ Evaluate their products carrying out appropriate tests. ▪ Evaluate their product, thinking of both appearance and the way it works.	▪ Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. ▪ Justify why they selected specific materials ▪ Evaluate if their product meets all design criteria. ▪ Take part in peer evaluation, giving and receiving feedback from fellow pupils.
Key Vocabulary	Explain	Evaluate	Compare Test Appearance Function	Criteria Feedback Test

Knowledge curriculum overview
(BWMAT EYFS planning progression document & National curriculum)

EYFS	KS1	KS2
Expressive arts and Design To share my creations, explaining the process I have used.	**Design** Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.	**Design** Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.
Physical development To join small construction together To manipulate a range of tools using one hand for a purpose. I am confident to try new activities and show independence, resilience and perseverance in the face of challenge.	**Make** Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	**Make** Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.
	Evaluate Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.	**Evaluate** Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world.
	Cooking and nutrition Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.	**Cooking and nutrition** Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.
	Technical knowledge Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	**Technical knowledge** Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. Apply their understanding of computing to program, monitor and control their products.