Subject Lead
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Why we learn Design Technology at Ewelme C.E. Primary School	Cultural Capital
At Ewelme Primary School we aim for our Design Technology Curriculum to support the topic based learning, as either weekly sessions or a blocked unit. Each year group has a termly project outcome incorporating models and food. The aim of each project is to: - Develop significant levels of originality and the willingness to take creative risks to produce innovative ideas and prototypes. - Demonstrate an excellent attitude to learning and independent working ethic. - Hold the ability to use time efficiently and work constructively and productively with others. - Have ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs. - Demonstrate the ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely. - Equip the children with a thorough knowledge of which tools, equipment and materials to use to make their products. - Apply mathematical knowledge where necessary. - Be responsible for managing risks exceptionally well to manufacture products safely and hygienically. - Develop a passion for the subject and knowledge of, up-to-date technological innovations in materials, products and systems.	Each year science week invites member of local trades and businesses to speak to the children and showcase projects they design and build. These help to inspire the children in their school work, and make links to future community ventures. All year groups have opportunities to sell foods in order to raise funds over the year. These involve both made and purchased goods at cake stalls, fetes and themed days such as Children in Need. Year 5/6 participate in 'enterprise week' where they design and make food items to share with others.

Overview of DT projects:

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception/Y1 A	**Dinosaurs and Us**		**The Seasons**		**In the Country**	
	Healthy Living – 5 a day		Moving Pictures		Making puppets – textiles	
Reception/Y1 B	**Animals and Toys**		**Whatever the Weather**		**About Town**	
	Designing New Toys		Sewing - materials		Construction – buildings	
Year 2	**Castles**		**The Rainforest**	**The Great Fire of London**	**Inventors and Explorers**	
		Model castles – materials and mechanics		Rainforest animal figure puppets - textiles		Healthy fruit kebabs – food technology
Year 3/4 A	**Rivers**		**Ancient Egypt**		**Our Village**	
		Christmas flavours – food technology	Egyptian pop-up book	Shaduf design (mechanics/ construction)	Night lights (electronics)	
Year 3/4 B	**Prehistoric**		**The Romans**		**Anglo-Saxons**	
	Stone Age meals (food)	Moving Christmas card (lever and hinge)		Computer modelling (coding including logo)	Sewing and decorating a pouch (textiles)	Viking boats (select/measure/ shape materials)
Year 5/6 A	**Amazing Americas**		**Earth and Space**		**Off with their heads!**	
	Totem Poles – create products			Construct moon buggies – wood and electronics		Enterprise week - various
Year 5/6 B	**The Victorians**		**Ancient Greece/ Democracy**		**World War II**	
		Cross stitch cushions - sewing		Construction – Ancient Greek exhibit entrance	Food rationing	Enterprise week - various

Overview of DT skills – progression and coverage

Skill	Context	Reception	Year 1 and 2	Year 3 and 4	Year 5 and 6
To master practical skills	Food	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; Make use of props and materials when role playing characters in narratives and stories.	• Cut, peel or grate ingredients safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Assemble or cook ingredients.	• Prepare ingredients hygienically using appropriate utensils. • Measure ingredients to the nearest gram accurately. • Follow a recipe. • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).	• Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Demonstrate a range of baking and cooking techniques. • Create and refine recipes, including ingredients, methods, cooking times and temperatures.
	Materials		• Cut materials safely using tools provided. • Measure and mark out to the nearest centimetre. • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). • Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).	• Cut materials accurately and safely by selecting appropriate tools. • Measure and mark out to the nearest millimetre. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). • Select appropriate joining techniques.	• Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).

	Textiles		• Shape textiles using templates. • Join textiles using running stitch. • Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing).	• Understand the need for a seam allowance. • Join textiles with appropriate stitching. • Select the most appropriate techniques to decorate textiles.	• Create objects (such as a cushion) that employ a seam allowance. • Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles.
To master practical skills	**Electricals and electronics**		• Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage).	• Create series and parallel circuits	• Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).
	Computing		• Model designs using software.	• Control and monitor models using software designed for this purpose.	• Write code to control and monitor models or products.
	Construction		• Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.	• Choose suitable techniques to construct products or to repair items. • Strengthen materials using suitable techniques.	• Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding).

Mechanics		• Create products using levers, wheels and winding mechanisms.	• Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).	• Convert rotary motion to linear using cams. • Use innovative combinations of electronics (or computing) and mechanics in product designs.
To design, make, evaluate and improve		• Design products that have a clear purpose and an intended user. • Make products, refining the design as work progresses. • Use software to design.	• Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • Refine work and techniques as work progresses, continually evaluating the product design. • Use software to design and represent product designs.	• Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate. • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.
To take inspiration from design throughout history		• Explore objects and designs to identify likes and dislikes of the designs. • Suggest improvements to existing designs. • Explore how products have been created.	• Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. • Improve upon existing designs, giving reasons for choices. • Disassemble products to understand how they work.	• Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience.