

COATHAM CE PRIMARY SCHOOL DT OVERVIEW

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	KS1		KS2			
<u>DESIGNING</u>	<p><u>Understanding contexts, users and purposes</u> Across KS1 pupils should:</p> <ul style="list-style-type: none"> • work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment • state what products they are designing and making • say whether their products are for themselves or other users • describe what their products are for • say how their products will work • say how they will make their products suitable for their intended users • use simple design criteria to help develop their ideas <p><u>Generating, developing, modelling and communicating ideas</u> Across KS1 pupils should:</p> <ul style="list-style-type: none"> • generate ideas by drawing on their own experiences • use knowledge of existing products to help come up with ideas • develop and communicate ideas by talking and drawing • model ideas by exploring materials, components and construction kits and by making templates and mockups • use information and communication technology, where appropriate, to develop and communicate their ideas 		<p><u>Understanding contexts, users and purposes</u> Across KS2 pupils should:</p> <ul style="list-style-type: none"> • work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment • describe the purpose of their products • indicate the design features of their products that will appeal to intended users • explain how particular parts of their products work <p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> • gather information about the needs and wants of particular individuals and groups • develop their own design criteria and use these to inform their ideas <p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> • carry out research, using surveys, interviews, questionnaires and web-based resources • identify the needs, wants, preferences and values of particular individuals and groups <p><u>Generating, developing, modelling and communicating ideas</u> Across KS2 pupils should:</p> <ul style="list-style-type: none"> • share and clarify ideas through discussion • model their ideas using prototypes and pattern pieces • use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas • use computer-aided design to develop and communicate their ideas <p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> • generate realistic ideas, focusing on the needs of the user • make design decisions that take account of the availability of resources <p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> • generate innovative ideas, drawing on research • make design decisions, taking account of constraints such as time, resources and cost 			
<u>MAKING</u>	<p><u>Planning:</u> Across KS1 pupils should:</p> <ul style="list-style-type: none"> • plan by suggesting what to do next • select from a range of tools and equipment, explaining their choices • select from a range of materials and components according to their characteristics <p><u>Practical skills and techniques:</u> Across KS1 pupils should:</p> <ul style="list-style-type: none"> • follow procedures for safety and hygiene • use a range of materials and components, including construction materials and kits, 		<p><u>Planning:</u> Across KS2 pupils should:</p> <ul style="list-style-type: none"> • select tools and equipment suitable for the task • explain their choice of tools and equipment in relation to the skills and techniques they will be using • select materials and components suitable for the task • explain their choice of materials and components according to functional properties and aesthetic qualities <p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> • order the main stages of making <p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> • produce appropriate lists of tools, equipment and materials that they need • formulate step-by-step plans as a guide to making <p><u>Planning skills and techniques:</u> Across KS2 pupils should:</p> <ul style="list-style-type: none"> • follow procedures for safety and hygiene • use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components <p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> • measure, mark out, cut and shape materials and 			

	textiles, food ingredients and mechanical components • measure, mark out, cut and shape materials and components • assemble, join and combine materials and components • use finishing techniques, including those from art and design		components with some accuracy • assemble, join and combine materials and components with some accuracy • apply a range of finishing techniques, including those from art and design, with some accuracy In late KS2 pupils should also: • accurately measure, mark out, cut and shape materials and components • accurately assemble, join and combine materials and components • accurately apply a range of finishing techniques, including those from art and design • use techniques that involve a number of steps • demonstrate resourcefulness when tackling practical problems			
<u>EVALUATING</u>	<p><u>Own ideas and products:</u> Across KS1 pupils should:</p> <ul style="list-style-type: none"> • talk about their design ideas and what they are making • make simple judgements about their products and ideas against design criteria • suggest how their products could be improved <p><u>Existing products:</u> Across KS1 pupils should explore:</p> <ul style="list-style-type: none"> • what products are • who products are for • what products are for • how products work • how products are used • where products might be used • what materials products are made from • what they like and dislike about products 		<p><u>Own ideas and products:</u> Across KS2 pupils should:</p> <ul style="list-style-type: none"> • identify the strengths and areas for development in their ideas and products • consider the views of others, including intended users, to improve their work <p>In early KS2 pupils should also: • refer to their design criteria as they design and make • use their design criteria to evaluate their completed products</p> <p>In late KS2 pupils should also: • critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make • evaluate their ideas and products against their original design specification</p> <p><u>Existing products:</u> Across KS2 pupils should investigate and analyse:</p> <ul style="list-style-type: none"> • how well products have been designed • how well products have been made • why materials have been chosen • what methods of construction have been used • how well products work • how well products achieve their purposes • how well products meet user needs and wants <p>In early KS2 pupils should also investigate and analyse: • who designed and made the products • where products were designed and made • when products were designed and made • whether products can be recycled or reused</p> <p>In late KS2 pupils should also investigate and analyse: • how much products cost to make • how innovative products are • how sustainable the materials in products are • what impact products have beyond their intended purpose</p> <p><u>Key events and individuals:</u></p> <ul style="list-style-type: none"> • about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products 			
<u>Mechanisms</u>	Begin to use levers or slides	Use levers or slides Begin to understand how to use wheels and axles	Select appropriate tools / techniques Alter product after checking, to make it better begin to try new/different ideas Use simple lever and linkages to create movement			Refine product after testing, considering aesthetics, functionality and purpose Incorporate hydraulics and pneumatics Be confident to try new / different ideas Use cams, pulleys and gears to create movement

<p><u>Textiles</u></p>		<p>Measure textiles Join textiles together to make a product, and explain how I did it Carefully cut textiles to produce accurate pieces Explain choices of textile Understand that a 3D textile structure can be made from two identical fabric shapes.</p>		<p>Think about user when choosing textiles Think about how to make product strong Begin to devise a template Explain how to join things in a different way Understand that a simple fabric shape can be used to make a 3D textiles project</p>		<p>Think about user's wants/needs and aesthetics when choosing textiles Make product attractive and strong Make a prototype use a range of joining techniques Think about how product might be sold Think carefully about what would improve product Understand that a single 3D textiles project can be made from a combination of fabric shapes.</p>
<p><u>Materials/Structures</u></p>	<p>Measure materials Describe some different characteristics of materials Join materials in different ways Use joining, rolling or folding to make it stronger Use own ideas to try to make product stronger</p>			<p>Use appropriate materials Work accurately to make cuts and holes Join materials Measure carefully to avoid mistakes Attempt to make product strong Continue working on product even if original didn't work Make a strong, stiff structure</p>	<p>Select materials carefully, considering intended use of product and appearance Explain how product meets design criteria Measure accurately enough to ensure precision Ensure product is strong and fit for purpose Begin to reinforce and strengthen a 3D frame</p>	
<p><u>Electrical systems</u></p>				<p>Use number of components in circuit Learn about how to program a computer to control product</p>		<p>Incorporate switch into product Confidently use number of components in circuit Begin to be able to program a computer to monitor changes in environment and control product</p>

						think of ways in which adding a circuit would improve product
<u>Food</u>	Understand where food comes from. Group familiar food products e.g. fruit and vegetables. Cut ingredients safely. Prepare simple dishes-safely and hygienically-without using a heat source	Group foods into the five groups in The Eatwell Plate. Cut, grate or peel ingredients safely. Prepare simple dishes-safely and hygienically-without using a heat source. Measure or weigh using cups or electronic scales.	Cut materials accurately and safely by selecting appropriate tools. Know that a healthy diet is made up from a variety of different food and drink, as depicted in The Eatwell Plate. Measure and weigh ingredients appropriately. Follow a recipe.	Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). Measure ingredients using scales. Prepare ingredients hygienically and using the appropriate utensils by following a recipe.	Assemble or cook ingredients, controlling the temperature of the oven or hob if cooking. Measure accurately using different equipment. Create recipes, including ingredients, methods, cooking times and temperatures. Understand the importance of correct storage and handling of ingredients.	Combine ingredients appropriately e.g. beating or rubbing. Measure ingredients to the nearest gram and millilitre and calculate ratios of ingredients to scale up or down from a recipe. Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed. Create and refine recipes, including ingredients, methods, cooking times and temperatures.