

Warbstow Primary Academy and Nursery

DESIGN TECHNOLOGY WHOLE SCHOOL PROGRESSION

<p>Subject content - Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.</p>				
<p>KS1 Programme of Study</p> <p>Design:</p> <ul style="list-style-type: none"> Design purposeful, functional, appealing products for themselves and others based on design criteria Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology <p>Make:</p> <ul style="list-style-type: none"> Select from and use a range of tools and equipment to perform practical tasks Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <p>Evaluate:</p> <ul style="list-style-type: none"> Explore and evaluate a range of existing products Evaluate their ideas and products against design criteria <p>Technical knowledge</p> <ul style="list-style-type: none"> Build structures, exploring how they can be made stronger, stiffer and more stable Explore and use mechanisms in their products – levers, sliders, wheels, axels 		<p>KS2 Programme of Study</p> <p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.</p> <p>Design:</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 their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>Make:</p> <ul style="list-style-type: none"> Select from and use a range of tools and equipment to perform practical tasks accurately Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities <p>Evaluate:</p> <ul style="list-style-type: none"> 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 technology have helped shaped the world <p>Technical knowledge</p> <ul style="list-style-type: none"> Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Understand and use mechanical systems in their products – gears, pulleys, cams, levers, linkages Understand and use electrical systems in their products – series circuits incorporating switches, bulbs, buzzers and motors Apply their understanding of computing to programme, monitor and control their products 		
<p>Cooking and nutrition – As part of their work with food, pupils should be taught how to cook and apply the basic principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.</p>				
<p>KS1 Programme of Study</p> <ul style="list-style-type: none"> Use the basic principles of a healthy and varied diet to prepare dishes Understand where food comes from 		<p>KS2 Programme of Study</p> <ul style="list-style-type: none"> 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 		
<p>EYFS Programme</p> <p>ELG: Expressive arts and design</p> <ul style="list-style-type: none"> Explore a variety of artistic effects to express their ideas and feelings Explore different materials freely, to develop their ideas about how to use them and what to make Join different materials and explore different textures Create collaboratively, sharing ideas, resources and skills 				
	<p>Foundation Sequence towards KS1</p>	<p>KS1 Sequence towards KS1</p>	<p>Lower KS2 Sequence towards Upper KS2</p>	<p>KS2</p>
<p>Design</p>	<ul style="list-style-type: none"> Experiment and build with a range of constructions resources, find out about the properties and functions of different construction materials Talk about ideas, choose resources, tools and techniques with a purpose in mind 	<ul style="list-style-type: none"> Use pictures and words to convey what they want to design/make Propose more than one idea for their product Use ICT to communicate ideas Select pictures to help develop ideas Use drawings as they are developed Add notes to drawings to help explanations Explore ideas by rearranging materials 	<ul style="list-style-type: none"> Develop more than one design or adaptation of an initial design Record the plan by drawing annotated sketches Plan a sequence of actions to make a product Use prototypes to develop and share ideas Think ahead about the order of their work and decide upon tools and materials 	<ul style="list-style-type: none"> Record ideas using annotated diagrams Use models, kits, and drawings to help formulate design ideas Sketch and model alternative ideas Decide which design idea to develop Devise step by step plans which can be read/followed by someone else Plan the sequence of work

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		<ul style="list-style-type: none"> Use mock-ups eg recycled material trial models to try out their ideas 	<ul style="list-style-type: none"> Propose realistic suggestions to how they can achieve their ideas Consider aesthetic qualities of materials chosen Use CAD where appropriate 	<ul style="list-style-type: none"> Use exploded diagrams and cross-sectional diagrams to communicate ideas
Make	<ul style="list-style-type: none"> Make models using different construction materials e.g. construction kits, reclaimed materials, experiment with different ways to build, construct and join resources Use equipment and tools to build, construct and make simple models and constructions 	<ul style="list-style-type: none"> Select materials from a limited range Explain what they are making Discuss their work as it progresses Select and name tools needed to work materials Explain which materials they are using and why 	<ul style="list-style-type: none"> Select from a range of tools for cutting, shaping, joining and finishing Use tools with accuracy Select from materials according to their functional properties Prepare pattern pieces as templates for their design Select from techniques for different parts of the process Use appropriate finishing techniques 	<ul style="list-style-type: none"> Develop one idea in depth Make prototypes Use researched information to inform decisions Produce detailed lists of ingredients/components/materials and tools Select and use a wide range of tools Cut accurately and safely to a marked line Select from and use a wide range of materials Refine their products – review, rework and improve
Evaluate	<ul style="list-style-type: none"> Talk about what they like/dislike about their models/constructions, say why and how they would change them 	<ul style="list-style-type: none"> Explore existing products and investigate how they have been made (including teacher made examples) Talk about their design as they develop and identify good and bad points Decide how existing products do/do not achieve their purpose Say what they like and do not like about items they have made Discuss how closely their finished product meets their own design criteria 	<ul style="list-style-type: none"> Investigate similar products to the one to be made to give starting points for a design Draw/sketch existing products in order to analyse and understand how products are made Research the needs of the user Identify the strengths and weaknesses of their design ideas in relation to purpose Decide which design idea to develop Consider and explain how the finished product could be improved Discuss how well the finished product meets their design criteria 	<ul style="list-style-type: none"> Research and evaluate existing products Consider user and purpose Identify the strength and weaknesses of their design ideas Explain how the finished product could be improved related to the design criteria Report using correct technical vocabulary Discuss how well the finished product meets the design criteria having tested outcomes with the user Investigate key events and individuals in design technology
Cooking and nutrition	<ul style="list-style-type: none"> Name a variety of fruit and vegetables Prepare fruit and vegetables for snack time – washing, peeling, chopping Select and name a variety of tools - knife, peeler, chopping board Know the importance of hygiene when preparing food including washing hands and surfaces Choose fruits and other foods for snack 	<ul style="list-style-type: none"> Group familiar food products eg fruit and vegetables Cut, chop, peel and grate a range of ingredients Work safely and hygienically Know about the needs of a variety of food in a diet – the eatwell plate Name and sort foods into the five groups in the eatwell plate Understand where food comes from Know that everyone should eat at least five portions of fruit and vegetables every day Prepare simple dishes safely and hygienically without using a heat source Measure or weigh using cups or electronic scales 	<ul style="list-style-type: none"> Follow instructions and recipes Join and combine a range of ingredients Begin to understand the food groups on the eatwell plate Know that to be active and healthy, food and drink are needed to provide energy for the body Know how to eat a healthy balanced diet, incorporating five portions of fruit and vegetables a day Understand seasonality Know where and how ingredients are reared and caught Prepare ingredients hygienically and using the appropriate utensils following a recipe Prepare and cook food using different cooking techniques Measure and weigh ingredients appropriately, using scales 	<ul style="list-style-type: none"> Understand and apply the principles of a varied and healthy diet Know where and how ingredients are grown and processed Know that different food and drink contain different substances – nutrients, water and fibre, that are needed for health Choose ingredients to support healthy eating choices when designing their food products Join and combine a widening range of ingredients eg beating or rubbing Select and prepare food for a particular purpose Prepare and cook a variety of mostly savoury dishes using a range of cooking techniques Measure ingredients to the nearest gram and millilitre and calculate rations of ingredients to scale up or down from a recipe Create and refine recipes, including ingredients, methods, cooking times and temperatures

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				<ul style="list-style-type: none"> Understand the importance of correct storage and handling of ingredients
Being a Designer (technical knowledge)	<ul style="list-style-type: none"> Name tools being used Use appropriate vocabulary they have learned 	<ul style="list-style-type: none"> Start to use technical vocabulary Cut out shapes which have been drawn using a template Join materials in a variety of ways Decorate using a variety of techniques Know some ways of making structures stronger and more stable Attach wheels to a chassis using an axle Know some different ways of making things move in a 2D plane 	<ul style="list-style-type: none"> Using an increasingly appropriate technical vocabulary for tools, materials and their properties Investigate key events and individuals in design technology Understand seam allowance,, prototype and product Use basic sewing skills Strengthen models Use electrical systems such as switches, bulbs and buzzers Use ICT to control products 	<ul style="list-style-type: none"> Use the correct vocabulary appropriate to the product Understand how key people have influenced design in a variety of contexts Join materials using appropriate methods Create 3D textile products using pattern pieces Understand pattern layout with textiles Build frameworks to support mechanisms Reinforce complex structures Use mechanical systems such as switches and motors Program, monitor and control using ICT