CE VA Primary & Early Years School Happisburgh

Skills Curriculum

Design Technology

Plan and Design					
Yr 1	**Yr 2**	**Yr 3**	**Yr 4**	**Yr 5**	**Yr 6**
• Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds and the local community		• Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment		• Carry out research, using surveys, interviews, questionnaires and web-based resources • Identify the needs, wants, preferences and values of particular individuals and groups	
• Explore objects and designs to identify likes and dislikes of the designs. • Suggest improvements to existing designs. • Explore how products have been created. • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology		• 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 • 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		• 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. • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	
• Identify who their products will be for • Explore how existing products are used	• Suggest possible users of a range of existing products • Consider where and when their own and others' products might be used	• Appreciate the importance of the 'user' within design and technology	• Evaluate whether users' needs and preferences have been met effectively	• Explore users' needs within a range of contexts • Use research to identify potential problems and opportunities for users • Analyse findings and draw conclusions from their research	• Distinguish between needs, wants, values, interests and preferences • Design products for individuals, clients, consumers and target groups

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• State what their products are for	• Suggest the purposes of a range of existing products	• Clarify the purpose of the products they are designing and making • Evaluate how well existing products meet their intended purpose	• Develop design criteria that take account of the intended purpose of their products	• Understand the concept of 'fitness for purpose' in the context of their own designing and making	• Distinguish between how well products are designed and how well they are made
• Know that their products should work in some way	• Know how a range of existing products work	• Develop specific technical knowledge and understanding in order to ensure that their products work well	• Understand the meaning of 'functionality' and its importance to design and technology	• Know how functionality is relevant to the product they are designing	• Know how the materials and components they use assist the functionality of the product

Making					
Yr 1	**Yr 2**	**Yr 3**	**Yr 4**	**Yr 5**	**Yr 6**
Food					
• Know about 5 portions fruit/veg • Understand where food comes from (plants/animals) and that it has to be farmed, grown, and caught. • Measure or weigh using measuring cups or electronic scales. • Cut, peel or grate ingredients safely and hygienically. • Assemble or cook ingredients.		• Know that food is grown, reared and caught in UK, Europe and wider world. • Measure ingredients to the nearest gram accurately. • Prepare ingredients hygienically using appropriate utensils. • 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. Understand how food is processed into ingredients. That seasons may affect the food available.	

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Materials		
• Measure and mark out to the nearest centimetre. • Cut materials safely using tools provided. • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). • Use materials to practice drilling, screwing, gluing and nailing materials to make and strengthen products. • Demonstrate a range of joining techniques (such as gluing, stitching, hinges or combining materials to strengthen). • Select from a range of tools and equipment.	•Measure and mark out to the nearest millimetre. •Cut materials accurately and safely by selecting appropriate tools. •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, including a variety of stitching techniques •Choose suitable techniques to construct products or to repair items. Strengthen materials using suitable 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 (such as the nature of fabric may require sharper scissors than would be used to cut paper) • Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding). • Use a sewing machine to join fabrics
Mechanics		
• Create products using levers, wheels and winding mechanisms. • Use sliders and axles.	• 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.
Electronics		
• Know which devices use electricity and which use batteries. • Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage)	• Create series and parallel circuits that make a product function.	• Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). • Use electrical circuits to control an action (through the use of a switch)
Computing		
• Model designs using software • Develop and communicate ideas using computing.	• Control and monitor models using software designed for this purpose.	• Write code to control and monitor models or products.

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Evaluating and Improving		
• Refine the design as work progresses. • Explore how free-standing structures can be made stronger, stiffer and more stable. • Use finishing techniques. • Suggest how their products could be improved.	• Refine work and techniques as work progresses, continually evaluating the product design. • Evaluate the product against the design criteria and functionality. • Suggest how their products could be improved.	• Make continual refinements as the work progresses. • Ensure products have a high quality finish, using art skills where appropriate. • Test products, seek consumer research and suggest modifications based on results.