



Hemswell Cliff Primary School – Design and Technology Progression

Aims The national curriculum for art and design aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

Values	Our School Values – RESPONSIBILITY, PATIENCE, QUALITY, CO-OPERATION, TOLERANCE, ASPIRATION are threaded through our curriculum. Links are made explicitly in short-term plans and our Values Progression grid.	
EYFS	Key Stage 1	Key stage 2
<ul style="list-style-type: none"> • To recognise a range of technology is used in places such as homes and schools. • Select and use technology for a particular purpose <p>Exploring and using media and materials</p> <ul style="list-style-type: none"> • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function Being imaginative • Use what they have learnt about media and materials in original ways, thinking about uses and purposes. • Represent their own ideas, thoughts and feelings through design and technology. • Understand the importance of a healthy diet • Talk about ways to keep healthy and safe 	<p>Pupils should be taught:</p> <p>Design</p> <ul style="list-style-type: none"> • 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 <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>Pupils should be taught:</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 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 <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 and technology have helped shape the world



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Design

Area	EYFS	Year 1	Year 2
Skill/ Knowledge	<ul style="list-style-type: none"> • Explain what they are making and which materials they are using. • Select materials from a limited range that will meet a simple design criteria e.g. shiny. • Select and name the tools needed to work the materials e.g. scissors for paper. <ul style="list-style-type: none"> • Explore ideas by rearranging materials. • Describe simple models or drawings of ideas and intentions. • Discuss their work as it progresses. 	<ul style="list-style-type: none"> • Draw on their own experience to help generate ideas • Suggest ideas and explain what they are going to do • Identify a target group for what they intend to design and make • Model their ideas in card and paper • Develop their design ideas applying findings from their earlier research 	<ul style="list-style-type: none"> • Generate ideas by drawing on their own and other people's experiences • Develop their design ideas through discussion, observation, drawing and modelling • Identify a purpose for what they intend to design and make • Identify simple design criteria • Make simple drawings and label parts
Assessment /Evidence		Contexts, Uses and Purposes <ul style="list-style-type: none"> • State the purpose of the design and the intended user • Explore materials, make templates and mock ups e.g. moving picture / lighthouse Ideas <ul style="list-style-type: none"> • Generate own ideas for design by drawing on own experiences or from reading 	

Area	Year 3	Year 4	Year 5	Year 6
Skill/ Knowledge	<ul style="list-style-type: none"> • Generate ideas for an item, considering its purpose and the user/s • Identify a purpose and establish criteria for a successful product. • Plan the order of their work before starting • Explore, develop and communicate design proposals by modelling ideas • Make drawings with labels when designing 	<ul style="list-style-type: none"> • Generate ideas, considering the purposes for which they are designing • Make labelled drawings from different views showing specific features • 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 • Evaluate products and identify criteria that can be used for their own designs 	<ul style="list-style-type: none"> • Generate ideas through brainstorming and identify a purpose for their product • Draw up a specification for their design • 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 • Use results of investigations, information sources, including ICT when developing design ideas 	<ul style="list-style-type: none"> • Communicate their ideas through detailed labelled drawings • Develop a design specification • Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways • Plan the order of their work, choosing appropriate materials, tools and techniques
Assessment /Evidence	Contexts, Uses and Purposes <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 • Research designs Ideas <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 diagrams • Use computer-aided design 		Contexts, Uses and Purposes <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 • Develop a simple design specification to guide their thinking • Recognise when their products have to fulfil conflicting requirements Ideas <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 • Develop prototypes 	



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Make

Area	EYFS	Year 1	Year 2
Skill/ Knowledge	<ul style="list-style-type: none"> • Begin to create their design using basic techniques. • Start to build structures, joining components together. • Look at simple hinges, wheels and axles. • Use technical vocabulary when appropriate. • Begin to use scissors to cut straight and curved edges and hole punches to punch holes. • Explore using/ holding basic tools such as a saw or hammer. • Use adhesives to join material. 	<ul style="list-style-type: none"> • Make their design using appropriate techniques • With help measure, mark out, cut and shape a range of materials • Use tools eg scissors and a hole punch safely • Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape • Use simple finishing techniques to improve the appearance of their product 	<ul style="list-style-type: none"> • Begin to select tools and materials; use vocab' to name and describe them • Measure, cut and score with some accuracy • Use hand tools safely and appropriately • Assemble, join and combine materials in order to make a product • Cut, shape and join fabric to make a simple garment. Use basic sewing techniques • Choose and use appropriate finishing techniques
Assessment /Evidence		<p>Planning</p> <ul style="list-style-type: none"> • Select from a range of tools and equipment explaining their choices • Select from a range of materials and components according to their characteristics <p>Practical Skills & Technique</p> <ul style="list-style-type: none"> • Follow procedures for safety • Use and make own templates • Measure, mark out, cut out and shape materials and components • Assemble, join and combine materials and components • Use simple fixing materials e.g. temporary – paper clips tape and permanent – glue, staples • Use finishing techniques, including those from art and design 	
Vocabulary		join, secure, template, cut, shape, equipment, permanent, temporary, combine, score, assemble	

Area	Year 3	Year 4	Year 5	Year 6
Skill/ Knowledge	<ul style="list-style-type: none"> • Select tools and techniques for making their product • Measure, mark out, cut, score and assemble components with more accuracy • Work safely and accurately with a range of simple tools • Think about their ideas as they make progress and be willing change things if this helps them improve their work • Measure, tape or pin, cut and join fabric with some accuracy • Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT 	<ul style="list-style-type: none"> • Select appropriate tools and techniques for making their product • Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques • Join and combine materials and components accurately in temporary and permanent ways • Sew using a range of different stitches, weave and knit • Measure, tape or pin, cut and join fabric with some accuracy • Use simple graphical communication techniques 	<ul style="list-style-type: none"> • Select appropriate materials, tools and techniques • Measure and mark out accurately • Use skills in using different tools and equipment safely and accurately • Cut and join with accuracy to ensure a good-quality finish to the product 	<ul style="list-style-type: none"> • Select appropriate tools, materials, components and techniques • Assemble components make working models • Use tools safely and accurately • Construct products using permanent joining techniques • Make modifications as they go along <ul style="list-style-type: none"> • Pin, sew and stitch materials together create a product • Achieve a quality product



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Assessment /Evidence	Planning <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 Order the main stages of making Produce detailed lists of tools, equipment and materials that they need 		
	Practical Skills & Technique <ul style="list-style-type: none"> Follow procedures for safety Use a wider range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components Measure, mark out, cut and shape materials and components with some accuracy Assemble, join and combine materials and components with some accuracy apply a range of finishing techniques, include those from art and design, with some accuracy 	Practical Skills & Technique <ul style="list-style-type: none"> Follow procedures for safety Use a wider range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components Accurately measure to nearest mm, mark out, cut and shape materials and components Accurately assemble, join and combine materials/components Accurately apply a range of finishing techniques, including those from art and design Use techniques that involve a number of steps Demonstrate resourcefulness, e.g. make refinements 	
Vocabulary	Neolithic Homes (c/c Art) 3D / model construct/ion join Clay mould dwelling clay board and tools texture assemble materials (cardboard, straws, paints) Iron Age Weave, wool, textile, assemble, alternate, join, material, thread	Egyptian Masks join permanent secure assemble decorate, embellish	



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Evaluate

Area	EYFS	Year 1	Year 2
Skill/ Knowledge	<ul style="list-style-type: none"> • Say what they like and do not like about items they have made and attempt to say why. • Begin to talk about their designs as they develop and identify good and bad points. • Start to talk about changes made during the making process. • Discuss how closely their finished products meet their design criteria. 	<ul style="list-style-type: none"> • Evaluate their product by discussing how well it works in relation to the purpose • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Evaluate their product by asking questions about what they have made and how they have gone about it 	<ul style="list-style-type: none"> • Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them
Assessment /Evidence		<p>Own Ideas and Products</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 • Evaluating products and components used <p>Existing Products</p> <ul style="list-style-type: none"> • Investigate - what products are, who they are for, how they are made and what materials are used 	

Area	Year 3	Year 4	Year 5	Year 6
Skill/ Knowledge	<ul style="list-style-type: none"> • Evaluate their product against original design criteria e.g. how well it meets its intended purpose • Disassemble and evaluate familiar product 	<ul style="list-style-type: none"> • Evaluate their work both during and at the end of the assignment • Evaluate their products carrying out appropriate tests 	<ul style="list-style-type: none"> • Evaluate a product against the original design specification • Evaluate it personally and seek evaluation from others 	<ul style="list-style-type: none"> • Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests • Record their evaluations using drawings with labels • Evaluate against their original criteria and suggest ways that their product could be improved
Assessment /Evidence	<p>Own Ideas and Products</p> <ul style="list-style-type: none"> • Identify the strengths and weaknesses of their ideas and products • Consider the views of others, including intended users, to improve their work • Refer back to their design criteria as they design and make • Use their design criteria to evaluate their completed products <p>Existing Products</p> <ul style="list-style-type: none"> • Investigate - 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 and how well products meet user needs and wants • Identify great designers and their work and use research of designers to influence work 			
	<p>Own Ideas and Products</p> <ul style="list-style-type: none"> • Identify the strengths and weaknesses of their ideas and products • Consider the views of others, including intended users, to improve their work <p>Existing Products</p>		<p>Own Ideas and Products</p> <ul style="list-style-type: none"> • Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make • Compare their ideas and products to their original design specification <p>Existing Products</p>	



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<ul style="list-style-type: none"> Investigate - who designed and made the products, where products were designed and made, when products were designed and made and whether products can be recycled or reused 	<ul style="list-style-type: none"> Investigate - how much products cost to make, how innovative products are and how sustainable the materials in products are
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Technical Knowledge (Making Products Work)

Area	EYFS	Year 1	Year 2
Skill/ Knowledge		Technical knowledge <ul style="list-style-type: none"> build structures, exploring how they can be made stronger, stiffer and more stable 	Technical knowledge <ul style="list-style-type: none"> explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
Assessment /Evidence		<ul style="list-style-type: none"> Understand about the simple working characteristics of materials and components Understand about the movement of simple mechanisms including levers, sliders (Year 1) wheels and axles (Year 2) Understand that food ingredients should be combined according to their sensory characteristics Know the correct technical vocabulary for the projects they are undertaking Understand how freestanding structures can be made stronger, stiffer and more stable 	

Area	Year 3	Year 4	Year 5	Year 6
Skill/ Knowledge	Technical knowledge <ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures 	Technical knowledge <ul style="list-style-type: none"> understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] 	Technical knowledge <ul style="list-style-type: none"> understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] 	Technical knowledge <ul style="list-style-type: none"> apply their understanding of computing to program, monitor and control their products.
Assessment /Evidence	<ul style="list-style-type: none"> Understand how to use learning from science and maths to help design and make products that work Know that materials have both functional properties and aesthetic qualities Know that materials can be combined and mixed to create more useful characteristics Know that mechanical and electrical systems have an input, process and output Use the correct technical vocabulary for the projects they are undertaking 			
	<ul style="list-style-type: none"> Understand how levers and linkages or pneumatic systems create movement Understand how simple electrical circuits and components can be used to create functional products Understand how to program a computer to control their products Know how to make strong, stiff shell structures Know that a single fabric shape can be used to make a 3D textiles product Know that food ingredients can be fresh, pre-cooked and processed 		<ul style="list-style-type: none"> Understand how cams, pulleys and gears create movement Understand how more complex electrical circuits and components can be used to create functional products Understand how to program a computer to monitor changes in the environment / control their products Know how to reinforce/strengthen a 3D framework Know that a 3D textiles product can be made from a combination of fabric shapes Know that a recipe can be adapted a by adding or substituting one or more ingredients 	
Vocabulary	Roman Catapults Pull, strength, reinforce, distance, structure, base, force, energy	Paint Spinning – Electric Motor circuit, electric motor, wire, connect, battery, power, rotate		



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Cooking & Nutrition

Area	EYFS	Year 1	Year 2
Skill/ Knowledge	<ul style="list-style-type: none"> Begin to develop a food vocabulary using taste, smell, texture and feel. Explore familiar food products e.g. fruit and vegetables. Stir, spread, knead and shape a range of food and ingredients. Begin to work safely and hygienically. Start to think about the need for a variety of foods in a diet. Measure and weigh food items, non-statutory measures e.g. spoons, cups. 	<ul style="list-style-type: none"> Begin to understand that all food comes from plants or animals. Explore common food sources Start to understand how to name and sort foods into the five groups in Know that everyone should eat at least five portions of fruit and vegetables every day <ul style="list-style-type: none"> Know how to prepare simple dishes safely and hygienically, without using a heat source. Know how to use techniques such as cutting, peeling and grating. Measure and weigh food items using non-standard measures 	<ul style="list-style-type: none"> Understand that all food comes from plants or animals. Develop understanding of where different foods come from Understand how to name and sort foods into the five groups in Know that everyone should eat at least five portions of fruit and vegetables every day <ul style="list-style-type: none"> Recognise the need for a variety of food in a diet Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source. Demonstrate how to use techniques such as cutting, peeling and grating Make dishes from other countries
Assessment /Evidence		<p>Where Food Comes From</p> <ul style="list-style-type: none"> Know where food comes from <p>Food Preparation, Cooking and Nutrition</p> <ul style="list-style-type: none"> Use appropriate equipment to weigh and measure ingredients Prepare simple dishes safely and hygienically, without using a heat sources Use techniques such as cutting Name and sort foods into the five groups of the 'eat well' plate Know that everyone should eat at least five portions of fruit and vegetables every day 	
Vocabulary		heat, cool, mould, ingredients, taste, like, dislike, cut, peel, chop	

Area	Year 3	Year 4	Year 5	Year 6
Skill/ Knowledge	<ul style="list-style-type: none"> Start to know that food is grown, reared and caught in the UK, Europe and the wider world. Understand how to prepare and cook a variety of dishes including experience of using a heat source. Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Know how a healthy diet is made up from a variety and balance of different food and drink Begin to know that to be active and healthy, food and drink are needed to provide energy for the body 	<ul style="list-style-type: none"> Understand that food is grown, reared and caught in the UK, Europe and the wider world. Understand how to prepare and cook a variety of predominantly savoury dishes including experience of using a heat source. Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Measure and weigh ingredients appropriately <ul style="list-style-type: none"> Explain why a healthy diet is important Know that to be active and healthy, food and drink are needed to provide energy for the body and identify healthy high energy foods 	<ul style="list-style-type: none"> Understand that food is grown, reared and caught in the UK, Europe and the wider world. Begin to understand that seasons may affect the food available. Understand how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of predominantly savoury dishes including the use of a heat source Demonstrate increasing confidence in how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. <ul style="list-style-type: none"> Evaluate a meal and consider if they contribute towards a balanced diet Begin to understand that different food and drink contain different substances that are needed for health 	<ul style="list-style-type: none"> Explain how ingredients are grown, reared and caught. Understand that seasons may affect the food available. Explain how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including the use of a heat source Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.



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	<ul style="list-style-type: none"> • Be able to identify foods which come from the UK and other countries in the world 	<ul style="list-style-type: none"> • Understand what to do to be hygienic and safe • Become familiar with some of the processes that foods go through to preserve them/make them more appealing 	<ul style="list-style-type: none"> • Explain what times of year particular foods are eaten in • Describe what to do to be hygienic and safe • Use appropriate tools and equipment, weighing and measuring with scales. 	<ul style="list-style-type: none"> • Know different food and drink contain different substances that are needed for health. • Use appropriate tools and equipment, weighing and measuring with scales. • Plan a healthy and affordable die
Assessment /Evidence	<p>Where Food Comes From</p> <ul style="list-style-type: none"> • Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world • Know that seasons may affect the food available • Understand how food is processed into ingredients that can be eaten or used in cooking <p>Food Preparation, Cooking and Nutrition</p> <ul style="list-style-type: none"> • How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking 			
	<p>Food Preparation, Cooking and Nutrition</p> <ul style="list-style-type: none"> • Know that a healthy diet is made up from a variety and balance of different foods and drinks, as depicted in the 'eat well' plate • Know that to be active and healthy, food is needed to provide energy for the body • Measure using grams • Follow a recipe 		<p>Food Preparation, Cooking and Nutrition</p> <ul style="list-style-type: none"> • Know that recipes can be adapted to change the appearance, taste, texture and aroma • Know that different foods contain different substances - nutrients, water and fibre - that are needed for health • Understand the need for correct storage • Measure accurately • Work out ratios in recipes 	
Vocabulary	<p>United Kingdom England, Ireland, Scotland, Wales, Greece traditional, recipes, carbohydrates, protein, fats/oils, fruit and vegetables, dairy, energy, repair, nutrients, water, vitamins, minerals, fibre, sugar, teaspoon, tablespoon, grams, healthy, unhealthy, balanced, temperature, sweet, savoury</p>			
Assessment /Evidence	<ul style="list-style-type: none"> • Twinkl Assessments • Short Written paragraph to show knowledge embedded from the topic • KWL Mind Maps completed at the start and end of topic • Photographs • Videos • Self & Peer Evaluations • Quizzes/Hands up 		<ul style="list-style-type: none"> • Tasks completed linked to Knowledge Organisers • Comparison activities • Completing an investigation or setting up own investigation • Annotated written work/or photographs • Scenario Discussions / What I know conversations.... (with teacher annotations) • Drama Activities • Topic summary "What I have learnt" 	