

DT progression map

Curriculum drivers: The curriculum is underpinned by the school's Curriculum Drivers: Community, Communication and Consolidation. The spiritual, moral, social and cultural development of our pupils and their understanding of the core values of our society are woven through the curriculum and developed through 'The Heatherlands Way' values of independence, resilience, motivation, aspiration and respect. The curriculum also consolidates the fundamental British values of democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs.

The knowledge and skills children learn must be co-ordinated and coherent. In order to achieve this in our curriculum, we have identified the key concepts or overarching ideas within each subject. To enable the children to access them, we call these the 'Big Ideas'. In DT these are: **design, problem solving and skills and expertise.**

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
National Curriculum/ Early Learning Goals	<p>ELG Creating with materials: Children at the expected level of development will:</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; ○ Share their creations, explaining the process they have used; <p>ELG: Managing Self Children at the expected level of development will:</p> <ul style="list-style-type: none"> ○ Be confident to try new activities and show independence, resilience and perseverance in the face of challenge; ○ Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. <p>ELG: Fine Motor Skills Children at the expected level of development will:</p> <ul style="list-style-type: none"> ○ Use a range of small tools, including scissors, paint brushes and cutlery; ○ Begin to show accuracy and care when drawing. 	<p>NATIONAL CURRICULUM: Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an alternative process of designing and making.</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 [for example, cutting, shaping, joining and finishing] ○ 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 [for example, levers, sliders, wheels and axles], in their products. 		<p>NATIONAL CURRICULUM: 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. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].</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 <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 [for example, gears, pulleys, cams, levers and linkages] ○ understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] ○ apply their understanding of computing to program, monitor and control their products. 				
Design (design, problem solving)	<ul style="list-style-type: none"> • Use own ideas to create designs which solve problems in a given context. (design, problem solving) • Show accuracy and care when drawing a design (design) • Share designs and explain the function of their creation, including how they intend it to work or 	<ul style="list-style-type: none"> • Begin to understand the development of existing products, asking: What they are for, how do they work and what materials are used. SCIENCE (design, problem solving) • Design products including a toy, healthy fruit kebab and plant pot based on design criteria created together during the first evaluation stage. (design) 	<ul style="list-style-type: none"> • Identify a purpose for what they intend to design and make, working to a specific design criteria. (design, problem solving) • Design functional and appealing products for themselves and other users, such as a wheeled vehicle; a moving Christmas card; and a finger puppet, based on design criteria. (design, 	<ul style="list-style-type: none"> • Use product research and understand how it leads to further planning. (design, problem solving) • Generate ideas for and design appealing and functional products including a pneumatic toy, a pizza and its packaging. (design, problem solving) 	<ul style="list-style-type: none"> • Through product research, consider a products' purpose and the intended user/consumer in order to generate design criteria. (design, problem solving) • Generate design ideas for a wooden marble maze and a functioning torch, considering the purposes for which they are 	<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 such as an applique cushion patch and a working mechanism – wind turbine. (design, problem solving) • Create own design 	<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 such as cheese seftons and a digital step counter. (design, problem solving) • Draw up a specification for their design using criteria devised by 	

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	<p>be used. (design, problem solving, skills and expertise)</p> <ul style="list-style-type: none"> Choose to use a range of materials and give reasons for their choices. (design) Choose from a range of joining materials, explaining how they will use them in their design (design, problem solving) 	<ul style="list-style-type: none"> Communicate designs via talking, pictures and plans. (design) 	<p>problem solving)</p> <ul style="list-style-type: none"> Draw on their own and others' experiences to generate their ideas and solve any problems. (design, problem solving) Use talk, pictures, labelled drawings and templates to model and communicate ideas. (design) 	<ul style="list-style-type: none"> Explain and justify design choices made. When planning, expand on their choice of materials and components including for function and aesthetics. SCIENCE (design, problem solving) Make drawings with detailed labels when designing and to develop ideas through the use of prototypes. (design, problem solving, skills and expertise) Start to understand and order the main stages of making a product. (design, problem solving) 	<p>designing and how their ideas fit into a design criteria. (design, problem solving)</p> <ul style="list-style-type: none"> Explain and justify their choice of materials according to function and aesthetic. SCIENCE (design, problem solving, skills and expertise) Confidently make labelled drawings from multiple views showing specific features and functions of their products. (design, problem solving, skills and expertise) 	<p>criteria based on an initial evaluation of products. (design, problem solving)</p> <ul style="list-style-type: none"> Select appropriate materials, tools and techniques with confidence for the desired effect. (design, problem solving, skills and expertise) Generate, develop and communicate their ideas through discussion, pattern pieces and the use of annotated drawings, exploded diagrams, including making accurate measurement. MATHS (design, problem solving, skills and expertise) Start to understand how sustainable and innovative they are and the impact products have beyond their intended purpose. (design, problem solving, skills and expertise) 	<p>evaluating existing products. (design, problem solving, skills and expertise)</p> <ul style="list-style-type: none"> Plan the order of work, choosing appropriate materials, tools and techniques to suit their project outcomes. SCIENCE (design, problem solving, skills and expertise) Generate, develop, model and communicate their ideas through discussion, use of annotated technical drawings, exploded diagrams and prototypes (design, problem solving, skills and expertise) Develop ideas throughout the project, revisiting and suggesting alternative methods of making if the first attempts fail. (design, problem solving, skills and expertise)
<p>Make (skills and expertise, problem solving)</p>	<ul style="list-style-type: none"> Use scissors, hole punches and other small tools to achieve the desired effect whilst making. (skills and expertise) Show accuracy and care when cutting and joining materials together. (skills and expertise) Use a range of materials including construction, card, cardboard, plastic, paper, tissue and junk modelling to experiment with making. (problem solving, skills and expertise) 	<ul style="list-style-type: none"> Follow simple instructions to make structures using examples and teacher models to support them. (skills and expertise) Mark out, cut and shape junk modelling materials, paper, string and collected, recycled items. (problem solving, skills and expertise) Use a range of appropriate tools and equipment such as scissors, a hole punch, a stapler, using them safely for their intended purpose (skills and expertise) 	<ul style="list-style-type: none"> Use the correct vocabulary to name and describe the tools and materials they are using. SCIENCE (skills and expertise) Measure, cut and fold materials including card, paper and fabric with some accuracy. (problem solving, skills and expertise) Use tools and equipment with some guidance, safely and appropriately including scissors and sewing needles. (problem solving, skills and expertise) 	<ul style="list-style-type: none"> Identify potential hazards when working and plan to work safely in order to avoid these. (problem solving, skills and expertise) Explain the choice of tools and equipment in relation to the skills and techniques they will be using. (skills and expertise) Measure, mark out, cut, score and join components such as card net structures with more accuracy. MATHS (problem solving, skills and expertise) 	<ul style="list-style-type: none"> Confidently explain and justify their choice of tools and materials in order to achieve their planned outcome. SCIENCE (design, problem solving, skills and expertise) Accurately mark out on paper, card and wood before cutting, using careful consideration and templates for their final product. (problem solving, skills and expertise) Use scissors, clamps and 	<ul style="list-style-type: none"> Select from and use a wider range of materials, tools and techniques, according to their functional properties and aesthetic qualities. SCIENCE (design, problem solving, skills and expertise) Demonstrate how to use cutting, sewing and joining tools and equipment safely and accurately with growing confidence, such as scissors and needles, showing caution to 	<ul style="list-style-type: none"> Select from, use and evaluate materials, tools and techniques, according to the task design, the functional properties and aesthetic qualities. (design, problem solving, skills and expertise) Demonstrate how to use cutting, sewing and joining tools and equipment safely and accurately with growing confidence, showing caution to hazards and

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	<p>expertise)</p> <ul style="list-style-type: none"> Use joining materials including split pins, tags, sellotape, masking tape and glue explaining how they are using them. (skills and expertise) 	<ul style="list-style-type: none"> Assemble, join and combine materials together using a variety of temporary methods such as glues, sellotape or masking tape. (problem solving, skills and expertise) Use simple finishing techniques to improve the appearance of a product such as colouring or covering materials. (skills and expertise) 	<ul style="list-style-type: none"> Explore more permanent joining techniques such as sewing, stapling and gluing, in order to make a product with some stability and structure. (problem solving, skills and expertise) Use a basic straight stitch while sewing to join two pieces of fabric. (problem solving, skills and expertise) Use drawing, colour choices, shape and arrangement to improve the appearance of a product. ART (skills and expertise) 	<ul style="list-style-type: none"> Strengthen and reinforce structures through the use of different shapes and additional materials. SCIENCE (problem solving, skills and expertise) Think about their ideas as they make progress and be willing to change things if this helps them to improve their work. (problem solving, skills and expertise) 	<p>hacksaws safely and appropriately with the necessary safety equipment in place. (problem solving, skills and expertise)</p> <ul style="list-style-type: none"> Join and combine components of the product in more permanent ways including using wood glue. (design, problem solving, skills and expertise) Improve the finish of the final product by sanding and decorating. (design, skills and expertise) 	<p>hazards and how to avoid them. (problem solving, skills and expertise)</p> <ul style="list-style-type: none"> Measure, cut and join materials such as plastic, card, fabric and paper with accuracy to ensure a good-quality finish to the product, strengthening their product when needed. SCIENCE (design, problem solving, skills and expertise) Create different textures through applique and combining fabrics with a blanket stitches. (skills and expertise) Improve the appearance of the products using techniques such as painting, additional materials and decoration. ART (design, problem solving, skills and expertise) 	<p>how to avoid them. (problem solving, skills and expertise)</p> <ul style="list-style-type: none"> Accurately measure, cut, fold and join paper, card, plastics, fabric and modelling materials. (problem solving, skills and expertise) Aim to make and achieve a quality product, making modifications to the product as they work to improve its structural stability, physical appearance and functionality. (design, problem solving, skills and expertise)
<p>Evaluate (Design, Problem Solving)</p>	<ul style="list-style-type: none"> Share outcomes, explaining the process they have used. (design, problem solving) Explain how the product may have been adapted or improved. (problem solving, skills and expertise) Evaluate the product against a given criteria ie. it must balance, it must float, it has a moving part etc (design, problem solving) 	<ul style="list-style-type: none"> Evaluate existing products and devices and discuss their effectiveness, explaining what they like and dislike about them. (design, problem solving) Evaluate their products as they are making them, talking about strengths and possible changes they might make (problem solving, skills and expertise) Evaluate outcomes against the class design criteria and explain whether their outcomes were successful or not. (design, problem solving) 	<ul style="list-style-type: none"> Explore and evaluate moving cards, cars, finger puppets and discuss their features/effectiveness, suggesting ways in which they could be improved and why. (design, problem solving, skills and expertise) Discuss their own ideas with confidence, explaining what they like about them and how they fit the agreed design criteria (design, problem solving) Compare their final outcome with their design, the design criteria and make a decision about their success. (design, problem solving, skills and expertise) 	<ul style="list-style-type: none"> Disassemble, test and evaluate familiar products, considering their own and the views of others of how to improve them. (design, problem solving, skills and expertise) Evaluate their final outcomes against the original design criteria, explaining how well it meets its intended purpose and possible next steps in the design process. (design, problem solving, skills and expertise) Evaluate the work of those who produce similar products; a local chef, Pizza 	<ul style="list-style-type: none"> Analyse and evaluate existing products by testing, to make a judgement of its suitability based on the design criteria. (design, problem solving) Know the benefits and importance of evaluating products to aid your own design. (design, problem solving) Analyse and evaluate their products, using appropriate tests to do so and taking into consideration the views of others, including the intended users (design, problem solving) 	<ul style="list-style-type: none"> Evaluate existing products through testing and seeking the views of others to create design criteria. (design, problem solving) Explore working mechanisms, identify the components and how they function. (design, problem solving) Evaluate the sustainability of their product, its impact on the user and the world around them. (skills and expertise) Continually evaluate their 	<ul style="list-style-type: none"> Evaluate and analyse existing products through testing, tasting and seeking the views of others in order to create informed, specific design criteria. (design, problem solving) Make appropriate changes to their work as a result of self-evaluation, feedback and critique. (design, problem solving) Evaluate their own work and outcomes against those which have been manufactured on a larger scale. (design, problem solving)

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			expertise)	with Love, and a typography designer, who have successfully developed products. Ask how they meet the needs of their users (design, problem solving, skills and expertise)	<ul style="list-style-type: none"> Know that Fairtrade work with farming co-operatives, businesses and governments to make trade fair. (skills and expertise) 	<p>outcome, using appropriate tests and taking into consideration the views of their intended users by seeking the views of others. (design, problem solving)</p> <ul style="list-style-type: none"> Evaluate the work of global individuals who have developed sustainable products and historical engineers involved in the development of pioneering inventions. (design, problem solving) 	<p>solving)</p>
<p>Technical knowledge</p> <p>(Problem solving, Skills and expertise)</p>	<ul style="list-style-type: none"> Know how to adapt a product to improve its strength and stability (problem solving, skills and expertise) 	<ul style="list-style-type: none"> Explore and investigate the properties and effectiveness of different materials, beginning to use this knowledge in their own product. SCIENCE (problem solving, skills and expertise) Explore how to make structures stronger, stiffer and more stable, understanding that the shape of the structure affects its strength. SCIENCE (problem solving, skills and expertise) 	<ul style="list-style-type: none"> Identify different types of simple mechanisms, such as a flap, slider or pop-up, in a moving card and know how they work. (problem solving, skills and expertise) Explore and use wheels and axles as mechanisms in their own vehicles. (problem solving, skills and expertise) Build structures, exploring how they can be made stronger, stiffer and more stable, understanding that the shape of the structure affects its strength. (problem solving, skills and expertise) 	<ul style="list-style-type: none"> Describe what pneumatics systems are, that they have an input and output, and how we can use them to make movement in a product. (problem solving, skills and expertise) Explore how nets make different 3d boxes and how these can be reinforced to hold a pizza safely. MATHS (problem solving, skills and expertise) 	<ul style="list-style-type: none"> Understand how to reinforce and strengthen a 3D framework using joining techniques, stiffer materials and suitable shapes. (problem solving, skills and expertise) Use simple electrical circuits within their products. SCIENCE (problem solving, skills and expertise) Know what materials insulate and conduct electricity. SCIENCE (problem solving, skills and expertise) Know what makes up a simple series circuit. SCIENCE (problem solving, skills and expertise) 	<ul style="list-style-type: none"> Know that mechanical and electrical systems have an input, process and output. COMPUTING, SCIENCE (problem solving, skills and expertise) Understand how mechanical systems such as pulleys and gears create movement. PE (skills and expertise) Use understanding of mechanisms to create a wind turbine structure. GEOGRAPHY (problem solving, skills and expertise) 	<ul style="list-style-type: none"> Know how to program a computer to monitor changes in the environment. COMPUTING (problem solving, skills and expertise) Understand that coding is a series of commands and instructions programmed through a computer. COMPUTING (problem solving, skills and expertise) Use understanding of microbits to create a functioning step counter. (problem solving, skills and expertise)

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	<p>ELG: Managing Self Children at the expected level of development will:</p> <ul style="list-style-type: none"> ○ Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. <p>ELG: Fine Motor Skills Children at the expected level of development will:</p> <ul style="list-style-type: none"> ○ Use a range of small tools, including scissors, paint brushes and cutlery; 	<p>NATIONAL CURRICULUM: As part of their work with food, pupils should be taught how to cook and apply the 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>Key stage 1</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>NATIONAL CURRICULUM: As part of their work with food, pupils should be taught how to cook and apply the 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>Key stage 2</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. 		
See also the Science progression – Humans and other living things					
<p>Cooking and nutrition (skills and expertise)</p>	<ul style="list-style-type: none"> • Know how to remain safe when using kitchen tools. (skills and expertise) • Know simple food hygiene practices. PSHE (skills and expertise) • Understand the different between a fruit and a vegetable. (skills and expertise) • Wash and peel vegetables safely (skills and expertise) • Know likes and dislikes and be able to communicate these. (skills and expertise) 	<ul style="list-style-type: none"> • Begin to understand that all food comes from plants or animals. SCIENCE skills and expertise) • Know the countries and climates around the world where different fruits are grown. GEOGRAPHY (skills and expertise) • Understand that everyone should eat at least five portions of fruit and vegetables every day. PSHE skills and expertise) • Prepare fruit kebabs by peeling, slicing and chopping fruits with support, safely and hygienically, without using a heat source (skills and expertise). skills and expertise) 	<ul style="list-style-type: none"> • Understand seasonality, and know where a variety of ingredients are grown, reared, caught and processed. (skills and expertise) • Understand that a healthy diet is made up from a variety and balance of different food and drink. PSHE (skills and expertise) • Know that to be active and healthy, food and drink are needed to provide energy for the body. PSHE skills and expertise) • Prepare and cook a savoury pizza safely and hygienically, using a heat source with the supervision of an adult. (skills and expertise) • Use a range of techniques such as chopping, slicing, grating, spreading, kneading and baking when making pizza dough and preparing the toppings (skills and expertise) 	<p>GEOGRAPHY Synthesise information about where food comes from and how it is transported and stored</p> <p>Discuss seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p> <p>Explain the stages of producing chocolate from cocoa bean to supermarket shelf and understand importance of supporting Fairtrade</p> <p>Understand that to be active and healthy, food and drink are needed to provide energy for the body. PSHE</p>	<ul style="list-style-type: none"> • Understand that seasons may affect the food available. (skills and expertise) • Understand how food is processed into ingredients that can be eaten or used in cooking. SCIENCE (skills and expertise) • Use thermometers to measure and monitor the changes of temperature of food before, during and after cooking. SCIENCE, MATHS (skills and expertise) • Know how to prepare and cook cheese seftons (straws) building confidence when chopping, slicing, grating, mixing/rubbing, kneading, rolling and baking. (skills and expertise)