

Hazelwood Schools



Design and Technology
Skills and Knowledge
Progression



Hazelwood Schools - D&T Knowledge and Skills Progression

Designing - To understand contexts, users and purposes

EYFS

Nursery	Reception
<ul style="list-style-type: none"> Give thought about the user and purpose of products. 	<ul style="list-style-type: none"> Gain some experience of designing, making and evaluating products for a specified user and purpose

Designing- To understand contexts, users and purposes

KS1		KS2			
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> Understand what the product is. Understand who the product is for. Discuss how product works. 	<ul style="list-style-type: none"> Identify where you might find a product Identify the materials used to make a product. Express opinions on a product. Explain why a product is suitable for a particular user. Explain who the product will be used for. Generate ideas using other people's experiences and existing products 	<ul style="list-style-type: none"> Identify the maker of a product. Identify when a product was made and its purpose. Research facts about inventors or designers linked to the product. Understand and gather information about what a particular group of people want from a product. Investigate similar products to the ideas. 	<ul style="list-style-type: none"> Develop the own simple design criteria and use these to inform the ideas. Consider the purposes for which they are designing- link with Mathematics and Science. Learn about inventors, designers, engineers, chefs and manufacturers who have developed innovative products. 	<ul style="list-style-type: none"> Identify how environmentally friendly the materials are. Evaluate the product appearance. Identify preferences of particular individuals and groups. Carry out research through use of questionnaires or surveys. Develop a simple design specification to guide the thinking. 	<ul style="list-style-type: none"> Use research to inform the design of innovative, functional, appealing products that are fit for purpose. Develop a simple design specification to inform the design of innovative, functional, appealing products that are fit for purpose. Know how much products cost to make. Know how sustainable and innovative they are. Know the impact products have beyond the intended purpose.



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Designing - To generate, develop and communicate ideas

EYFS	
Nursery	Reception
<ul style="list-style-type: none"> Begin to talk more extensively about things 	<ul style="list-style-type: none"> Speak in a small group or class and one to one, offering own ideas Create collaboratively, sharing ideas, resources and skills

Designing - To generate, develop and communicate ideas

KS1		KS2			
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> Generate ideas through your own experiences – home, school, garden, local community, industry and wider environment. Discuss materials. Communicate ideas through talking and drawing. Model ideas through use of IT (paint, programmable toys, 2simple, word) Select an audience for the design and make. Discuss basic steps for design and making. Use a simple given design criteria 	<ul style="list-style-type: none"> Identify a purpose for the design. Identify a simple design criteria. Communicate ideas through observations and labelled drawings. Model ideas by exploring materials, components and construction kits and by making templates and mock-ups. Choose appropriate materials to use based on properties. Select appropriate techniques explaining: First... Next... Last 	<ul style="list-style-type: none"> Generate and describe ideas for a product, the purpose of it and how it will work. Develop their own design criteria and use these to inform the ideas. Draw/sketch products to help analyse how they are made. Think ahead about the order of the work and decide upon tools and materials. Plan a sequence of actions to make the product. When planning, explain the choice of materials and components including function and aesthetics. 	<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 Evaluate products and identify criteria that can be used for their own designs. When planning, explain the choice of materials and components according to function and aesthetic. 	<ul style="list-style-type: none"> Generate ideas through brainstorming and identify a purpose for the product. 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. With growing confidence apply a range of finishing techniques, including those from art and design. Draw up a specification for the design- link with Mathematics and Science. 	<ul style="list-style-type: none"> Carry out discussions, create annotated sketches, cross-sectional and exploded diagrams and/or prototypes. Communicate the ideas through detailed labelled drawings. Plan the order of the work, choosing appropriate materials, tools and techniques. Draw up a specification for the design- link with Mathematics and Science. Suggest alternative methods of making it if the first attempts fail. Identify the strengths and areas for development in the ideas and products.

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MAKE To plan and develop practical skills	
EYFS	
Nursery	Reception
<ul style="list-style-type: none"> Select tools for purpose Select resources and activities with help Show increasing controls in holding a variety of objects such as jugs for pouring and mark making tools Use scissors to make snips to paper Join different materials and explore different textures 	<ul style="list-style-type: none"> Use a variety of tools with accuracy for example paintbrushes, pencils, tweezers and scissors and also safely Choose resources in order to make something.

MAKE To plan and develop practical skills					
KS1		KS2			
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> Make design using appropriate techniques. Use construction kits, materials, textiles and mechanical components. Choose suitable equipment eg scissors and a hole punch safely. With help, measure, mark, cut and shape a range of products. Join and assemble materials and components together using a variety of temporary methods e.g. glues or masking tape. . Begin to use simple finishing techniques to improve the appearance of the product 	<ul style="list-style-type: none"> Begin to describe how a tool can be suitably used. With help measure, mark, cut and shape components with increasing accuracy. Start to join, assemble and combine materials in order to make a product. Use basic sewing techniques. Use hand tools safely and appropriately. Make simple changes to the design as they make. Begin to select tools and materials; use correct vocabulary to name and describe them. 	<ul style="list-style-type: none"> Select suitable tools and techniques for making the product. Explain using appropriate vocabulary why they should use particular tools. Use a design criteria whilst making a product. Order the main stages of making. Measure, mark, cut, shape and assemble components with more accuracy. Measure, cut, tape or pin and join fabric with improved accuracy. Use finishing techniques with some accuracy to strengthen and improve the appearance of the product. Make appropriate changes to the design through 	<ul style="list-style-type: none"> Join and combine materials and components accurately in temporary and permanent ways. Sew using a range of different stitches and weave. Measure, tape or pin, cut and join fabric with some accuracy. Use simple graphical communication techniques. Work safely and accurately with a range of simple tools. Select a wider range of tools and techniques for making products safely. Begin to use finishing techniques to strengthen and improve the appearance of the product 	<ul style="list-style-type: none"> Measure and mark out accurately. Use skills in using different tools and equipment safely and accurately. Select appropriate materials, tools and techniques e.g. 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 the functional properties and aesthetic qualities. 	<ul style="list-style-type: none"> 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. Assemble components to make working models. Aim to make and to achieve a quality product. With confidence, pin, sew and stitch materials together to create a product.

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		equipment and materials as they make	<ul style="list-style-type: none"> using a range of equipment including ICT. 	<ul style="list-style-type: none"> Use materials with awareness of conservation. Weigh and measure accurately (time, dry ingredients, liquids). Use finishing techniques to strengthen and improve the appearance of the product using a range of equipment including ICT. 	<ul style="list-style-type: none"> Demonstrate when making modifications as they go along. Construct products using permanent joining techniques. Use techniques that involve a number of steps. Demonstrate resourcefulness when tackling practical problems. Use finishing techniques to strengthen and improve the appearance of the product using a range of equipment including ICT.
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EVALUATE - Own Products	
EYFS	
Nursery	Reception
<ul style="list-style-type: none"> Give meaning to what they have made 	<ul style="list-style-type: none"> Recall previous learning, refine ideas and improve design Share what they have made,, explaining the process they have used.

EVALUATE - Own Products					
KS1		KS2			
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> Evaluate through discussion of the design ideas and what they have made. Make simple judgments of how it met the design. Identify one simple change which could be made to the product. 	<ul style="list-style-type: none"> Evaluate the products against a design criteria. Identify how the product could be improved through a few simple changes. 	<ul style="list-style-type: none"> Begin to refer to the design criteria as they make the product. Begin to use the design criteria to evaluate the completed product. Discuss its purpose, appearance and the conservation of materials. 	<ul style="list-style-type: none"> Evaluate the products carrying out appropriate tests. Identify the strengths and areas for development in the ideas and products. Consider the views of others, including intended users, to improve the work. Refer to the design criteria as they design and make. Use the design criteria to evaluate the completed products. 	<ul style="list-style-type: none"> Evaluate a product against the original design specification and by carrying out tests. Evaluate the work both during and at the end of the project. Seek evaluation from others. 	<ul style="list-style-type: none"> Evaluate products by identifying strengths and areas for development, and carrying out appropriate tests. Record evaluations using drawings with labels. Evaluate against the original criteria and suggest ways that the product could be improved.

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EVALUATE - Existing Products	
EYFS	
Nursery	Reception
<ul style="list-style-type: none"> Explore existing products 	<ul style="list-style-type: none"> Talk about existing products

EVALUATE - Existing Products					
KS1		KS2			
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> Evaluate what products are. Evaluate who products are for. Evaluate what they like and dislike about products. 	<ul style="list-style-type: none"> Evaluate and explore a range of products. Evaluate what products are for. Evaluate how products are used. Evaluate where products might be used. Evaluate how products work. Evaluate what materials products are made from 	<ul style="list-style-type: none"> Evaluate who designed and made the products. Evaluate how well products have been made. Evaluate why materials have been chosen. Evaluate how well products work. Evaluate how well products meet user needs and wants. Evaluate how well products have been designed. 	<ul style="list-style-type: none"> Evaluate how well products achieve their purposes. Evaluate, investigate and analyse who designed and made the products. Evaluate where products were designed and made. Evaluate when products were designed and made. 	<ul style="list-style-type: none"> Evaluate how much products cost to make. Evaluate how innovative products are. Evaluate what methods of construction have been used. Evaluate whether products can be recycled or reused. evaluate the key designs of individuals in design and technology 	<ul style="list-style-type: none"> Evaluate how sustainable the materials in products are. Evaluate what impact products have beyond their intended purpose. Evaluate the key designs of individuals in design and technology has helped shape the world.

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TECHNICAL KNOWLEDGE	
EYFS	
Nursery	Reception
Structures <ul style="list-style-type: none"> Explore construction kits to build walls, towers and frameworks. Use basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card. Mechanisms/Mechanical systems <ul style="list-style-type: none"> Explore moving vehicles through play. Textiles <ul style="list-style-type: none"> Explore and use different fabrics Food <ul style="list-style-type: none"> Experience of common fruit and vegetables, undertaking sensory activities (appearance, taste and smell.) Experience of threading/ piercing soft fruit and vegetables using appropriate utensil 	Structures <ul style="list-style-type: none"> Explore different methods of joining card and paper, simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape. Mechanisms/Mechanical systems <ul style="list-style-type: none"> Assembled vehicles with moving wheels using construction kits. Textiles <ul style="list-style-type: none"> Cut and join fabrics with simple techniques. Food <ul style="list-style-type: none"> Experience of simple recipes through play Experience of mixing, stirring, pouring ingredients through play Learn basic food hygiene practices when handling food including the importance of following instructions to control risk

TECHNICAL KNOWLEDGE – Mechanisms/ Mechanical systems					
KS1			KS2		
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> To know how simple mechanisms such as: levers and sliders work To know that different mechanisms produce different types of movement. 	<ul style="list-style-type: none"> To know how simple mechanisms such as: Wheels and Axils work To distinguish between fixed and freely moving axles 	<ul style="list-style-type: none"> To understand and know how to use simple pneumatic system to create movement 	<ul style="list-style-type: none"> To know how to use a range (levers and linkages to create movement To know and explain the difference between a lever and a linkage.To know and explain the difference between fixed and loose pivots 	<ul style="list-style-type: none"> To understand and know how to use pulleys and gears to create movement To understand that mechanical systems have an input, process and an output. To understand how gears and pulleys can be used to speed up, slow down or change the direction of movement 	No unit

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TECHNICAL KNOWLEDGE - Structures		
KS1	Lower KS2	Upper KS2
Year 1	Year 3	Year 5
<ul style="list-style-type: none"> To know freestanding structures can be made stronger, stiffer and more stable 	<ul style="list-style-type: none"> To know how to make strong, stiff shell structures 	<ul style="list-style-type: none"> To know how to create a frame structure.

TECHNICAL KNOWLEDGE - Textiles		
KS1		Lower KS2
Year 1	Year 3	Year 6
<ul style="list-style-type: none"> To know 3D products can be assembled from two identical fabric shapes To know how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. To know different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons 	<ul style="list-style-type: none"> To know that a single fabric shape can be used to make a 3D textiles product. To know how to strengthen, stiffen and reinforce existing fabrics. To know how to securely join two pieces of fabric together. To understand the need for patterns and seam allowances 	<ul style="list-style-type: none"> To know that a 3D textiles product can be made from a combination of fabric shapes. To know how to thread needles and join textiles using a range of stitches. To sew textiles by joining the right side together and making seams.

TECHNICAL KNOWLEDGE - Electrical systems	
Lower KS2	Upper KS2
Year 4	Year 6
<ul style="list-style-type: none"> To know how to create series circuits and parallel circuits To know how to use electrical systems to enhance quality of product 	<ul style="list-style-type: none"> To know how to create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips to enhance a product To know how use electrical systems to create functional products

TECHNICAL KNOWLEDGE - Using computing to program	
Lower KS2	Upper KS2
Year 4	Year 6
<ul style="list-style-type: none"> To know how to control and monitor models or products 	<ul style="list-style-type: none"> To know how to write simple code to control and monitor models or products.

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Cooking and Nutrition	
EYFS	
Nursery	Reception
<ul style="list-style-type: none"> Know how to use simple techniques: <ul style="list-style-type: none"> Wash and dry my own hands Know that I need to be careful when using scissors or a knife use a knife, fork and spoon 	<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. Know how to use simple techniques: <ul style="list-style-type: none"> Cut - use scissors to cut or cutters to make shapes from dough Effectively, safely and confidently use scissors, knives, forks and spoon

Cooking and Nutrition					
KS1		Lower KS2		Upper KS2	
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> To know that all food comes from plants or animals. To know that everyone should eat five portions of fruit and vegetables a day. Know how to prepare simple dishes safely and hygienically without using a heat source. Understand hygiene rules when cooking. Know how to use simple techniques: <ul style="list-style-type: none"> Peel - by hand, e.g. satsuma, banana. Mix/stir - mash ingredients together using a fork. Spoon - ingredients between containers. Tear - fresh herbs. 	<ul style="list-style-type: none"> Know that food has to be farmed, grown elsewhere (e.g. home) or caught. Name and sort foods into the five groups in 'The EatWell Plate' Prepare simple dishes without a heat source. Understand safety procedures for cooking with equipment. Understand hygiene rules for cooking. Assemble or cook healthy ingredients. Know how to use simple techniques: <ul style="list-style-type: none"> Peel - with a swivel peeler adult support. Mix/stir - with increasing thoroughness to combine ingredients. Spoon - ingredients into different containers with 	<ul style="list-style-type: none"> To know how a variety of ingredients used in products are grown and harvested, reared, caught and processed To understand that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate'. Practise techniques by following a simple recipe To know how to use a range of utensils and use a range of techniques to prepare ingredients hygienically: <ul style="list-style-type: none"> Shape - with Mix/stir - whisk foods using a fork. Mix/stir - rub in fat to flour. 	<p style="text-align: center;">No unit</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. understand that seasons may affect the food available. Know that a recipe can be adapted by adding or substituting one or more ingredients. Understand that recipes can be adapted to change appearance, taste, texture and aroma. 	<ul style="list-style-type: none"> 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 safely and hygienically including, where appropriate, the use of a heat source. Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health. Understand the importance of correct

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<ul style="list-style-type: none"> ○ Cut - soft foods with butter knife e.g. banana, canned peach slices. ○ Juice - using a juicer to extract juice, e.g. orange. ○ Peel - with a swivel peeler adult support. ○ Mix/stir - with increasing thoroughness to combine ingredients. ○ Grate - soft foods, ○ Cut - use a fork to secure food 	<p>increasing accuracy and minimal spillage.</p> <ul style="list-style-type: none"> ○ Spread - soft ingredients, e.g. hummus ○ Measure - using different size measuring spoons, Measure - refer to ingredients in simple fractions, e.g. half, quarter. ○ Cut out - ingredients neatly with a cutter. ○ Cut out - use a table knife in equal portions, ○ Snip - fresh herbs, spring onions. 	<ul style="list-style-type: none"> ○ Mix/stir - knead dough. accuracy for a desired effect, e.g. basic bread roll ○ Sift - sift flour into a bowl. ○ Measure - refer to ingredients in simple fractions, e.g. half, quarter. ○ Peel - with a swivel peeler with supervision. Spoon - to be able to use two spoons to transfer ingredients into different size/shape containers with minimal spillage, ○ Measure - using a measuring jug with support to obtain accuracy. ○ Cut out - placing the cutter in positions to make good of the material available and avoid waste. ○ Cut - medium resistance foods with a vegetable knife, e.g. cucumber. ○ Cut - use a fork or the claw grip to secure food. 		<ul style="list-style-type: none"> ● Understand and apply principles of a healthy and varied diet. ● Know how to prepare and cook predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source ● Demonstrate a range of baking and cooking techniques: <ul style="list-style-type: none"> ○ Snip - with greater dexterity and control, e.g. to shred lettuce or cabbage leaves for salad. ○ Peel - with a swivel peel to create food ribbons to be used in a dish, e.g. courgette/carrot ribbons with supervision. ○ Mix/stir - fold ingredients together carefully. ○ Measure - using a measuring jug independently and accurately. ○ Grate - using the zesting part of a grater, e.g. lemon, orange. ○ Cut - higher resistance food with a vegetable knife, using the claw grip, e.g. celery, carrots 	<p>storage and handling of ingredients.</p> <ul style="list-style-type: none"> ● Create and refine recipes, including healthy seasonal ingredients, methods, cooking times and temperatures. ● Understand how to use a range of techniques: ● Measure - accurately and calculate ratios of ingredients to scale up or down from a recipe. ● Spoon - be able to gauge the quantities spooned to ensure an equal amount of ingredients in each container. ● Measure - using digital and analogue scales accurately and independently. ● Grate - using a nutmeg grinder. ● Cut - higher resistant foods from whole using the bridge hold, e.g. halve and apple, raw potato.
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