



Hemington Primary School Design and Technology Curriculum Statement

Intent

- Hemington's DT curriculum is one that aims to allow children to become self-motivated and confident learners, who can work independently and as part of a team.
- We intend for our pupils to become problem solvers who are not afraid of making mistakes.
- The main aim is to ensure that learners develop technical and practical competencies as well as an understanding that design and technology enhances our lives.
- The curriculum should enable children to develop a knowledge and understanding of simple product design. Children will learn how to take a problem, plan a product based solution, design the product, build the product and evaluate it against the original brief.

Implementation

- DT is taught through topics and has links to other areas of learning.
- Children are taught to think like designers by following a product design process for each DT unit of work.
- Pupils work by themselves or collaboratively to solve problems, they feel comfortable taking risks in a safe and supportive environment.
- Pupils evaluate existing products and use their own creativity and imagination to design and make products which solve problems.
- Pupils are formally taught the age appropriate knowledge and practical skills, enabling them to design and construct high quality products.
- Teachers create an environment which fosters confidence, encouraging children to evaluate their own work and the work of others, using well- chosen subject vocabulary. They test work and critically evaluate it, this leads to product development and improvement.
- Pupils are taught the importance of good nutrition and healthy- eating, they develop the life skills which will allow them to feed themselves and others, now and in later life.
- Pupils are given the opportunity to display their designs and products to a wider school community audience.
- Pupils are given the resources they need to take designs in their own direction wherever possible and appropriate.

Impact

Our pupils have:

- A positive attitude to learning, both independently and collaboratively.
- A problem solving attitude, and the knowledge that it is OK to make mistakes if they are evaluated and improved on.
- The ability to evaluate, design and make high quality products which fulfil a brief.
- The ability to use appropriate tools and techniques to finish work to a high standard.
- The practical competence to work safely and hygienically.



Hemington Primary Design and Technology subject progression

EYFS	Subject Knowledge	Vocabulary	key equipment
	<p>ELG: Children sing songs, make music and dance, and experiment with ways of changing them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Children can: Constructs with a purpose in mind, using a variety of resources. Uses simple tools and techniques competently and appropriately. Selects appropriate resources and adapts work where necessary. Selects tools and techniques needed to shape, assemble and join materials they are using. They use and explore a variety of materials, tools and techniques. - They represent their own ideas, thoughts and feelings through design and technology.</p>	<p>Choose, safe, tools, shape, names of 2D shapes, join, ideas, count, build, cut, side, corner, straight, curved, list, guess, length, width, order, draw, label</p> <p>Stick, design, Cooking - Roll, mix, cook, bake, cut, chop, cool, measuring, weight</p>	<p>Scissors, glue, sticky tape, split pins, single hole punch, paint, playdough, crayons, string, elastic bands, recyclable materials, construction kits</p> <p>Salt dough, sewing equipment, playdough</p> <p>Cooking – bowls, spoons, scales, tins, pans</p>
KS1	Subject Knowledge	Vocabulary	key equipment
	<p>Materials - Cut materials safely using tools provided. Materials - Measure and mark out to the nearest centimetre. Materials - Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). Materials - Demonstrate a range of joining techniques (such as gluing, using hinges or combining materials to strengthen). Textiles - Shape textiles using templates. Textiles - Join textiles using running stitch. Textiles - Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing). Electrical and electronics - Diagnose faults in battery-operated devices (such as low battery, water damage or battery terminal damage). Construction - Use materials to practise drilling, screwing, gluing and nailing materials to make products (such as wheeled vehicles). Mechanics - Create products using levers and winding mechanisms. Design products that have a clear purpose and an intended user. Make products, refining the design as work progresses. Explore objects and designs to identify likes and dislikes of the designs. Suggest improvements to existing designs.</p>	<p>idea, discuss, choose, drawing, labelling, hole punch, paper fastener, join, cut carefully, planning, moving, handle, lever, pivot, pull, push, slider, direction, blade, metal, balance, movement, forward, backwards, order, sequence, length, model, plan, equipment, parts, construction, join, fix, movement, structure, weak, strong, on top of, underneath, side, edge, surface, thinner, thicker, corner, point, symmetrical edge, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube (other 3D shapes), list, scissors, masking tape, strong, weak, smaller than, beside, next to, explore, predict, guess, joining, combining connecting, testing, vehicle, wheels, chassis, axles, doweling, hole punch, logo, distance, plan, template, fabric, stitch, thread, strong, quality, features, strengthen, reflective</p>	<p>scissors, balances, paper fasteners, masking tape, glue, plier punch or single-hole punch, construction kits, recyclable materials (cereal boxes etc...), string adhesive tape, plasticine, stapler, paint, fabric, wooded and plastic wheels, doweling, plastic sheeting, simple jigs, plastic mesh, binca, hessian (for learning to sew), fabric scissors, thread, needles, sequins, buttons (items for decoration), pipe cleaners, lolly sticks, hacksaw, sawing jig, computer design programs.</p>

		symmetry, position, to, towards, needle thread, tape measure.	
KS1	<u>Cooking and Nutrition Subject Knowledge</u>	<u>Cooking and Nutrition Vocabulary</u>	<u>Cooking and Nutrition Key Equipment</u>
	<p>Where food comes from Across KS1 pupils should know:</p> <ul style="list-style-type: none"> • that all food comes from plants or animals • that food has to be farmed, grown elsewhere (e.g. home) or caught <p>Food preparation, cooking and nutrition Across KS1 pupils should know:</p> <ul style="list-style-type: none"> • how to name and sort foods into the five groups in The eat well plate • that everyone should eat at least five portions of fruit and vegetables every day • how to prepare simple dishes safely and hygienically, without nursing a heat source • how to use techniques such as cutting, peeling and grating 	<p><u>Cooking and Nutrition</u> making eg washing, cleaning, peeling, cutting, slicing, grating salad, fruit, vegetables, peel, flesh, skin, grater, chopping board, peeler, seeds, pips, stalk, juice, root, leaf, stone, bunch, crisp, sharp, juicy, sweet, sour, sticky, squashy, smooth, crunchy, scented, waxy</p>	<p><u>Cooking and Nutrition</u> range of fruit and vegetables (including some unusual fruit/vegetables) plates, dishes, bowls, peeler, grater, chopping board, plastic mixing bowls, vegetable knives, forks, spoons plastic table covers, antibacterial cleaner, washing-up facilities, aprons</p>
Lower KS2	Subject Knowledge	Vocabulary	key equipment
	<p>Materials - Cut materials accurately and safely by selecting appropriate tools.</p> <p>Materials - Measure and mark out to the nearest millimetre.</p> <p>Materials - Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut-outs).</p> <p>Materials - Select appropriate joining techniques.</p> <p>Textiles - Understand the need for a seam allowance.</p> <p>Textiles - Join textiles with appropriate stitching.</p> <p>Textiles - Select the most appropriate techniques to decorate textiles</p> <p>Electricals and electronics - Create series and parallel circuits.</p> <p>Construction - Choose suitable techniques to construct products or to repair items.</p> <p>Mechanics - Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).</p> <p>Design with purpose by identifying opportunities to design.</p> <p>Make products by working efficiently (such as by carefully selecting materials).</p> <p>Refine work and techniques as work progresses, continually evaluating the product design.</p> <p>Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs.</p> <p>Improve upon existing designs, giving reasons for choices.</p>	<p>font, graphic, decision, evaluating, criteria, fit for purpose, holds, scoring, tabs, adhesives, join, assemble, accuracy, three-dimensional (3D) shape, cube, cuboid, prism, net, vertex, edge, face, packaging, shell structure, breadth, capacity, brainstorm, suggestion, evaluate, ideas, constraints, appropriate, graph, data, sort, order, set, label, title, list, probable, possible, impossible, planning, storyboard, components, fixing, tubing, syringe, attaching, finishing, control, pneumatic system, pressure, inflate, deflate, input, output, pump, hinge, fastest, slowest, often, always, sometimes, never, choice, decoration, purpose, rolling, cutting, finish, board, stable, free-standing, stiffen, frame, sturdy, reinforce, quality, distance, near, close, wide, narrow, deep, shallow, thick, user, design criteria, labelled drawings, stiffening, reinforcing, pattern/templates, strength, weaknesses, accurate, finishing, fastening, compartment, zip, press stud, clasp, hook and eye, button, buckle, seam, seam allowance, reinforce, dye, embroidery, strength, hard-</p>	<p>Resources paper, squared paper, coloured card, tissue paper, clear adhesive tape, masking tape, PVA glue, clear and tinted acetate film or sheet, pencils, rulers, scissors, glue spreaders, coloured pencils and/or felt-tip pens, graphics design program, plastic tubing, balloons, sterile syringes, construction kits, recycled materials, papier mache, fabric, foil, lower temperature glue gun, parcel tape, pipe-cleaners scissors, snips, magazines for collage, sequins, card, card eg cereal-packet card, felt, calico, hessian, selection of fastenings, scissors for fabric, thread, tape, needles, fabric glue, fabric crayons, paints, paper fasteners or binders, paper straws, hick corrugated card and drawing pins for modelling ideas, wavy line cutters, perforation cutters, torches, lights and lamps, batteries ,battery holders, bulbs, bulb holders, crocodile connectors, lengths of connecting wire, aluminium foil, wire stripper and cutter, small electrical</p>

		wearing, stretch, fray, mock-up, fit for the purpose, fold, adhesive, scoring, cutting, joining, temporary fixing, permanent fixing, linkage, lever, pivot, flexible, shape, joint, hinge, area, surface, covers, rotary, linear, specific, drawings, classify, clip, rectify fault, screw, connect, join, electricity, circuit, battery, battery holder, bulb, bulb holder, wire, insulation, crocodile connector, aluminium foil, switch, reflector, energyUKS2	screwdriver, control programs.
		Blue sections are vocab and resources we will use. Please note textiles are not covered.	
Lower KS2	<u>Cooking and Nutrition Subject Knowledge</u>	<u>Cooking and Nutrition Vocabulary</u>	<u>Cooking and Nutrition Key Equipment</u>
	<p><u>Cooking and Nutrition</u> Where food comes from Across KS2 pupils should know:</p> <ul style="list-style-type: none"> • 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 <p>Food preparation, cooking and nutrition Across KS2 pupils should know:</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>In lower KS2 pupils should also know:</p> <ul style="list-style-type: none"> • that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the eat well plate • that to be active and healthy, food and drink are needed to provide energy for the body. <p>Open Sandwich healthy eating , different breads, baking breads with different flavours, food from different places in the world.</p>	<p><u>Cooking and Nutrition</u> texture, taste, appearance, healthy, preference, criteria, cost, questionnaire, data, frequency diagram, cut, mix, spread, slice, blend, grate, chop, chopping board, knife, grater, fridge, food groups, hygiene, high risk, healthy eating, 'balanced plate', thick, thin, sweet, sour, bitter, salty, names of foods</p>	<p><u>Cooking and Nutrition</u> plastic table covers, antibacterial cleaner, hand-washing and washing-up facilities, aprons tools and equipment eg knives, chopping boards, graters, plates, bowls, plastic film, access to oven, the eat well plate</p>
Upper KS2	Subject Knowledge	Vocabulary	key equipment
	<p>Materials - 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).</p> <p>Materials - Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).</p> <p>Textiles - Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).</p>	<p>Designing, investigate, survey, plan, research, texture, intention, structure, outcome, mouldable material, mould, moulding, adhesives, polyvinyl acetate (PVA) wood glue, shaping, cutting, sequence, annotated diagram, sketch, decision, prototype, model, communicate, shape, assemble, accurate, saw, mark out, cam,</p>	<p>Resources margarine pots, plastic bottles, food containers, biscuit tins, carrier bags, rice, sand, gravel, glasspaper, , coloured card, clear adhesive tape, masking tape, PVA glue, string, rubber bands</p>

	<p>Textiles - Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).</p> <p>Electricals and electronics - Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistor and chips).</p> <p>Construction - Develop a range of practical skills to create products and repair items (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).</p> <p>Mechanics - Convert rotary motion to linear using cams.</p> <p>Mechanics - Use innovative combinations of electronics (or computing) and mechanics in product designs.</p> <p>Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). Make products through stages of prototypes, making continual refinements. Ensure products have a high- quality finish, using art skills where appropriate.</p> <p>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 improvement to the user experience.</p>	<p>mechanism, movement, linear motion, rotary motion, pivot, off-centre, axle, force, framework, follower, guide, offset, shaft, flow chart, mock-up , fabric swatches, working drawing, working properties, seam, seam allowance, insulation, sole, upper, inner, reinforce, right side/wrong side, stitch, stitching, tacking, wadding, sewing machine, hem, rotation, spindle, axle, drive belt, pulley, electric motor, speed, framework, horizontal, vertical, electric circuit, switch, gearing up or down, computer control, mechanism, criteria, exploded diagrams, improvements, construction kits, modify</p>	<p>stripwood (assorted sections and sizes), dowel rod</p> <p>range of basic tools for cutting and shaping paper, card and wood</p> <p>paints and brushes</p> <p>mouldable materials e.g. clay, papier mache, construction kits</p> <p>stiff sheet materials, e.g. card, foam board, corrugated plastic, prepared cams (shaped and off-centre wheels)</p> <p>wooden wheels, doweling, cardboard boxes or wooden frames</p> <p>PVA glue, bench hooks, saws, hand drill, G-cramp, round file, single-hole punch, drill, metal safety ruler, craft knife, cutting mats and lower temperature glue gun, paper straws, pipe-cleaners, tape, thread, string, needle, sticky tape, drills and bit, cutting tools, motor mounting clips</p> <p>pulleys (large and small), elastic bands</p> <p>square section wood, card triangles, glue</p> <p>plastic tubing, corrugated plastic, materials for finishing eg coloured papers, foil, fabric, snips, saws, cutting jigs, bench hooks, mitre blocks</p> <p>gluing jigs for square section wood, wire strippers</p>
Upper KS2	<u>Cooking and Nutrition Subject Knowledge</u>	<u>Cooking and Nutrition Vocabulary</u>	<u>Cooking and Nutrition Key Equipment</u>
	<p><u>Cooking and Nutrition</u></p> <p>Where food comes from</p> <p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> • 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 <p>In upper KS2 pupils should also know:</p> <ul style="list-style-type: none"> • that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking <p>Food preparation, cooking and nutrition</p> <p>Across KS2 pupils should know:</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 	<p><u>Cooking and Nutrition</u></p> <p>evaluating, investigation, preferences, profile, specification, costing</p> <p>ingredients, quantities, shaping, mixing, topping, kneading, proving, baking, cooking method, grilling, boiling, frying, glazing</p> <p>yeast, wheat, grain, flour, dough, crust, rise, texture, doughy, crisp, chewy, yeasty, stretchy, elastic</p> <p>food safety e.g. hygiene, bacteria, mould, decay, food poisoning, designing, research,</p>	<p><u>Cooking and Nutrition</u></p> <p>tools and equipment e.g. weighing scales, mixing bowls, chopping boards, measuring jugs, graters, spoons, rolling pins, pastry brush, bread tins, baking trays, dinner knives</p> <p>access to an oven</p> <p>plastic table covers, antibacterial cleaner, hand-washing and washing-up facilities, aprons</p> <p>computer, access to websites</p>

- how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking

In upper KS2 pupils should also know:

- that recipes can be adapted to change the appearance, taste, texture and aroma

Food/cooking through historical study i.e. Anglo-Saxon, Roman and Viking diet and food. Use of ingredients available at the time and in different seasons to plan, design and cook a meal for each historical study and answer why they chose Britain to settle i.e. soil to grow crops.

Comparison of their favourite meals .

evaluate, brainstorm, consumer, quality, combining, creaming, mixing, finishing, sandwiched, hygiene, antibacterial, quality control, flavour, crisp, crunchy, sticky, soft dough, elastic dough