

ST HUGH'S CATHOLIC PRIMARY SCHOOL

D&T PROGRESSION OF SKILLS

Area		By the end of Key Stage 1 pupils will have had the opportunity to:	By the end of Key Stage 2 pupils will have had the opportunity to:
Structures	Designing	<ul style="list-style-type: none"> • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Develop, model and communicate their ideas through talking, mock-ups and drawings. 	<ul style="list-style-type: none"> • Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product. • Develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas.
	Making	<ul style="list-style-type: none"> • Plan by suggesting what to do next. • Select and use tools, skills and techniques, explaining their choices. • Select new and reclaimed materials and construction kits to build their structures. • Use simple finishing techniques suitable for the structure they are creating. 	<ul style="list-style-type: none"> • Plan the order of the main stages of making. • Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy. • Explain their choice of materials according to functional properties and aesthetic qualities. • Use computer-generated finishing techniques suitable for the product they are creating.
	Evaluating	<ul style="list-style-type: none"> • Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings. • Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. 	<ul style="list-style-type: none"> • Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used. • Test and evaluate their own products against design criteria and the intended user and purpose.
	Technical knowledge and understanding	<ul style="list-style-type: none"> • Know how to make freestanding structures stronger, stiffer and more stable. • Know and use technical vocabulary relevant to the project. 	<ul style="list-style-type: none"> • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Develop and use knowledge of how to construct strong, stiff shell structures. • Know and use technical vocabulary relevant to the project.
	Key Vocabulary	cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder, design, make, evaluate, user, purpose, ideas, design criteria, product, function	shell structure, three-dimensional (3-D), shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype

Area		By the end of Key Stage 1 pupils will have had the opportunity to:	By the end of Lower Key Stage 2 pupils will have had the opportunity to:	By the end of Upper Key Stage 2 pupils will have had the opportunity to:
Mechanisms	Designing	<ul style="list-style-type: none"> • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Develop, model and communicate their ideas through drawings and mock-ups with card and paper. 	<ul style="list-style-type: none"> • Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user. • Use annotated sketches and prototypes to develop, model and communicate ideas. 	<ul style="list-style-type: none"> • Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide their thinking. • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.
	Making	<ul style="list-style-type: none"> • Plan by suggesting what to do next. • Select and use a range of tools and equipment, explaining their choices, to perform practical tasks such as cutting, shaping and joining to allow movement. • Use simple finishing techniques suitable for the product they are creating. 	<ul style="list-style-type: none"> • Order the main stages of making. • Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons. • Select from and use finishing techniques suitable for the product they are creating. 	<ul style="list-style-type: none"> • Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.
	Evaluating	<ul style="list-style-type: none"> • Explore a range of existing products that use intended mechanisms. • Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria. 	<ul style="list-style-type: none"> • Investigate and analyse books, videos and products with pneumatic mechanisms. • Evaluate their own products and ideas against criteria and user needs, as they design and make. 	<ul style="list-style-type: none"> • Compare the final product to the original design specification. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work. • Investigate famous manufacturing and engineering companies relevant to the project.
	Technical knowledge and understanding	<ul style="list-style-type: none"> • Explore and use mechanisms distinguishing between different types. • Understand that different mechanisms produce different types of movement. • Know and use technical vocabulary relevant to the project. 	<ul style="list-style-type: none"> • Understand and use pneumatic mechanisms. • Know and use technical vocabulary relevant to the project. 	<ul style="list-style-type: none"> • Understand that mechanical and electrical systems have an input, process and an output. • Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. • Know and use technical vocabulary relevant to the project.

	Key Vocabulary	Sliders and Leavers slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join pull, push, up, down, straight, curve, forwards, backwards, design, make, evaluate, user, purpose, ideas, design criteria, product, function Wheels and Axles vehicle, wheel, axle, axle holder, chassis, body, cab, assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, names of tools, equipment and materials used design, make, evaluate, purpose, user, criteria, functional	components, fixing, attaching, tubing, syringe, plunger, split pin, paper fastener pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight, linear, rotary, oscillating, reciprocating, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, research, evaluate, ideas, constraints, investigate	pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output, design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief
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Area		By the end of Key Stage 1 pupils will have had the opportunity to:	By the end of Key Stage 2 pupils will have had the opportunity to:
Textiles	Designing	<ul style="list-style-type: none"> • Design a functional and appealing product for a chosen user and purpose based on simple design criteria. • Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology. 	<ul style="list-style-type: none"> • Generate innovative ideas through research including surveys, interviews and questionnaires. • Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes including using computer-aided design. • Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.
	Making	<ul style="list-style-type: none"> • Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. • Select from and use textiles according to their characteristics. 	<ul style="list-style-type: none"> • Produce detailed lists of equipment and fabrics relevant to their tasks. • Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment, including CAD, to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

	Evaluating	<ul style="list-style-type: none"> • Explore and evaluate a range of existing textile products relevant to the project being undertaken. • Evaluate their ideas throughout and their final products against original design criteria. 	<ul style="list-style-type: none"> • Investigate and analyse textile products linked to their final product. • Compare the final product to the original design specification. • Test products with intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work.
	Technical knowledge and understanding	<ul style="list-style-type: none"> • Understand how simple 3-D textile products are made, using a template to create two identical shapes. • Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. • Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. • Know and use technical vocabulary relevant to the project. 	<ul style="list-style-type: none"> • A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate.
	Key Vocabulary	names of existing products, joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish, features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function	<p>computer aided design (CAD), computer aided manufacture (CAM)</p> <p>font, lettering, text, graphics, menu, scale, modify, repeat, copy, flip</p> <p>design brief, design criteria, design decisions, innovative, prototype</p> <p>seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces</p> <p>names of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper</p> <p>annotate, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype</p>

Area		By the end of Key Stage 1 pupils will have had the opportunity to:	By the end of Lower Key Stage 2 pupils will have had the opportunity to:	By the end of Upper Key Stage 2 pupils will have had the opportunity to:
Food	Designing	<ul style="list-style-type: none"> Design appealing products for a particular user based on simple design criteria. Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. Communicate these ideas through talk and drawings. 	<ul style="list-style-type: none"> Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. 	<ul style="list-style-type: none"> Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.
	Making	<ul style="list-style-type: none"> Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. 	<ul style="list-style-type: none"> Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select and use appropriate utensils and equipment to prepare and combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. 	<ul style="list-style-type: none"> Write a step-by-step recipe, including a list of ingredients, equipment and utensils Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. Make, decorate and present the food product appropriately for the intended user and purpose.
	Evaluating	<ul style="list-style-type: none"> Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. Evaluate ideas and finished products against design criteria, including intended user and purpose. 	<ul style="list-style-type: none"> Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. 	<ul style="list-style-type: none"> Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. Understand how key chefs have influenced eating habits to promote varied and healthy diets.
	Technical knowledge and understanding	<ul style="list-style-type: none"> Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of <i>The eatwell plate</i>. Know and use technical and sensory vocabulary relevant to the project. 	<ul style="list-style-type: none"> Know how to use appropriate equipment and utensils to prepare and combine food. Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. Know and use relevant technical and sensory vocabulary appropriately. 	<ul style="list-style-type: none"> Know how to use utensils and equipment including heat sources to prepare and cook food. Understand about seasonality in relation to food products and the source of different food products. Know and use relevant technical and sensory vocabulary.

	Key Vocabulary	fruit and vegetable names, names of equipment and utensils, sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria	name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet, planning, design criteria, purpose, user, annotated sketch, sensory evaluations	ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality, utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble, design specification, innovative, research, evaluate, design brief
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