

Curriculum Map

Design Technology

Year	YEAR C					
	Autumn: Shell Structures, ‘Shell structures using CAD’		Spring: Textiles, ‘2D shape and 3D product’		Summer: Mechanical Systems, ‘Pneumatics’	
Year 3	Links to previous learning		Links to previous learning		Links to previous learning	
	Experience of using different joining, cutting and finishing techniques with paper and card. A basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science. Familiarity with Purple Mash 2 Design and Make programme (Vehicles KS1 Year B)		Children will have joined fabric in simple ways by gluing and stitching (running stitch). Children will have used simple patterns and templates for marking out. Children will have evaluated a range of textile products.		Children will have explored simple mechanisms, such as sliders and levers, and simple structures. Children will have learnt how materials can be joined to allow movement. Children will have joined and combined materials using simple tools and techniques.	
	Knowledge		Knowledge		Knowledge	
	I know about nets of cubes and cuboids and, where appropriate, more complex 3D shapes. I know how to construct strong, stiff shell structures. I know and use technical vocabulary relevant to the project.		I know how to strengthen, stiffen and reinforce existing fabrics. I know and understand how to securely join two pieces of fabric together. I know and understand the need for patterns and seam allowances. I know and use technical vocabulary relevant to the project.		I know, understand and can use pneumatic mechanisms. I know and use technical vocabulary relevant to the project.	
	Key Skills		Key Skills		Key Skills	
	Designing I can 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. I can develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas.		Designing I can generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. I can produce annotated sketches, prototypes, final product sketches and pattern pieces.		Designing I can generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user. I can use annotated sketches and prototypes to develop, model and communicate ideas.	
	Making I can plan the order of the main stages of making. I can select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy. I can explain their choice of materials according to functional properties and aesthetic qualities. I can use computer-generated finishing techniques suitable for the product they are creating.		Making I can plan the main stages of making. I can select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. I can select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.		Making I can order the main stages of making. I can select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons. I can select from and use finishing techniques suitable for the product they are creating.	
	Evaluating I can investigate and evaluate a range of shell structures including the materials, components and techniques that have been used. I can test and evaluate their own products against design criteria and the intended user and purpose.		Evaluating I can investigate a range of 3-D textile products relevant to the project. I can test their product against the original design criteria and with the intended user. Take into account others’ views. I can understand how a key event/individual has influenced the development of the chosen product and/or fabric.		Evaluating I can investigate and analyse books, videos and products with pneumatic mechanisms. I can evaluate their own products and ideas against criteria and user needs, as they design and make.	
	Vocabulary		Vocabulary		Vocabulary	
	user, purpose, design, function, evaluating, design brief design criteria, innovative, prototype 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		user, purpose, design, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance, model, pattern pieces		user, purpose, function, prototype, design criteria, innovative, appealing, design brief, research, evaluate, ideas, constraints, investigate 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	

		Cultural opportunities		Cultural opportunities		Cultural opportunities
		Great Big Green Week Key values School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork. British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy. Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness.		TBC Key values School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork. British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy. Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness.		TBC Key values School Values: Happy, Healthy and Secure. Confident and Independent. Respectful and Caring. Inspired and Excited to Learn. Teamwork. British Values: The rule of law. Individual liberty. Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith. Democracy. Christian Star Qualities: Love, Joy, Peace, Patience, Kindness, Gentleness, Self-Control, Faithfulness, Goodness.
		Book list & Resources		Book list & Resources		Book list & Resources
		collection of shell structures for different purposes and users card, squared paper, coloured paper, adhesive tape, masking tape, PVA glue, glue spreaders, acetate sheet, pencils, felt-tip pens, rulers, right/left handed scissors, computer with computer-aided design (CAD) software such as Techsoft 2D Primary or Microsoft Word, printer		collection of textile products linked to the chosen product to be made selection of fabrics and fastenings left/right handed scissors, needles, thread, tape, fabric glue, pins, measuring tape, items to use for finishing e.g. fabric paints, threads, appliqué pieces, paints for printing, thin paint brushes		examples of products and books, photos and videos showing pneumatic systems, washing-up liquid bottles, 5mm plastic tubing, sterile syringes, T-connectors, balloons, card, plastic sheet, PVA glue, masking tape, parcel tape, sticky pads, pipe cleaners, elastic bands, syringe clips, left/right handed scissors, snips, card drills, cutting mats, hole punches, finishing media and materials
Year 4	Topic	Autumn: Shell Structures, ‘Shell structures using CAD’		Spring: Textiles, ‘2D shape and 3D product’		Summer: Mechanical Systems, ‘Pneumatics’
		Links to previous Learning		Links to previous Learning		Links to previous Learning
		Experience of using different joining, cutting and finishing techniques with paper and card. A basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science. Familiarity with Purple Mash 2 Design and Make programme (Vehicles KS1 Year B)		Children will have joined fabric in simple ways by gluing and stitching (running stitch). Children will have used simple patterns and templates for marking out. Children will have evaluated a range of textile products.		Children will have explored simple mechanisms, such as sliders and levers, and simple structures. Children will have learnt how materials can be joined to allow movement. Children will have joined and combined materials using simple tools and techniques.
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		Making I can plan the order of the main stages of making. I can select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy. I can explain their choice of materials according to functional properties and aesthetic qualities. I can use computer-generated finishing techniques suitable for the product they are creating.		Making I can plan the main stages of making. I can select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. I can select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.		Making I can order the main stages of making. I can select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons. I can select from and use finishing techniques suitable for the product they are creating.
				Evaluating I can investigate a range of 3-D textile products relevant to the project.		Evaluating

		Evaluating I can investigate and evaluate a range of shell structures including the materials, components and techniques that have been used. I can test and evaluate their own products against design criteria and the intended user and purpose.		I can test their product against the original design criteria and with the intended user. Take into account others’ views. I can understand how a key event/individual has influenced the development of the chosen product and/or fabric.		I can investigate and analyse books, videos and products with pneumatic mechanisms. I can evaluate their own products and ideas against criteria and user needs, as they design and make.
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		Cultural Opportunities		Cultural Opportunities		Cultural Opportunities
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YEAR C						
Year 5	Topic	Autumn: Shell Structures, ‘Shell structures using CAD’		Spring: Textiles, ‘2D shape and 3D product’		Summer: Mechanical Systems, ‘Pneumatics’
		Links to previous Learning		Links to previous Learning		Links to previous Learning
		Experience of using different joining, cutting and finishing techniques with paper and card. A basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science. Familiarity with Purple Mash 2 Design and Make programme (Vehicles KS1 Year B)		Children will have joined fabric in simple ways by gluing and stitching (running stitch). Children will have used simple patterns and templates for marking out. Children will have evaluated a range of textile products.		Children will have explored simple mechanisms, such as sliders and levers, and simple structures. Children will have learnt how materials can be joined to allow movement. Children will have joined and combined materials using simple tools and techniques.
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