

ACET Junior Academies

Scheme of Work for Design Technology

Y4 Textiles - 2D shape to 3D product



About this unit: In this unit, children will explore a range of textiles products and will learn about how 3D products are made from joining two fabric pieces together. They will learn a range of joining techniques and will develop skills in measuring, cutting out fabrics and stitching. Children will design a product for an intended user and purpose and will apply their knowledge and skills learnt in the unit to make their product. Children will evaluate their completed products, judging the extent to which it meets the original design criteria.

Final piece ideas: purses/money pouches (Link Viking money pouches)

Inventor - George de Mestral (Velcro)

Unit structure

1. Investigate and Evaluate: How are textiles products made?
2. Focused Tasks - Making techniques: How do I join fabrics together?
3. Focused Tasks - Finishing techniques: How could I finish my product?
4. Designing: What could I make and how could I make it?
5. Making: Can I make the product I have designed?
6. Making - Finishing: Is my product finished?
7. Evaluating: What worked well and what could I do to make it even better?

Links to previous and future National Curriculum units

- KS1 - Templates and joining techniques
- UKS2 - Combining different fabric shapes

1: Investigate and Evaluate: How are textiles products made?

Links to previous learning	Knowledge and second order concepts	Skills, Concepts and Vocabulary:	Assessment criteria:	Curricular links:
<p>Pupils will have joined fabric in simple ways by gluing and stitching. Pupils will have used simple patterns and templates for marking out. Pupils will have evaluated a range of textile products.</p>	<p>Substantive knowledge: (<i>What students should know.</i>) That there are a range of textile that have been designed, produced and evaluated. Know who designed products and when and where they were made. Understand how a key event/individual has influenced the development of the chosen product and/or fabric.</p> <p>Second order concepts: (<i>What students should understand</i>) Evaluation Purpose Function</p>	<p>Skills</p> <ul style="list-style-type: none"> Evaluate existing products, considering how well they have been made, the materials chosen, whether they work, how they have been made and if they are fit for purpose. Identify who designed a product, and when and where it was produced. Identify the materials products are made from, and whether the product can be recycled or reused. <p>Key Vocabulary/concepts: https://20353.stem.org.uk/Nuffield%20Glossary2/index.html</p> <p>Evaluate, user, purpose, design, product, function, innovative, investigate, aesthetics, pattern pieces, stitch, seam, seam allowance, fabric/names of fabric, finishing, fastening</p>	<p>Can your children: Explore a range of textile products. Understand the purpose of products and their intended user. Identify who made the products and when they were made. Understand that 3D products are made from joining 2D pieces. Identify the fabrics products are made from and explain why they have been chosen. Express opinions about products based on design and use.</p>	<p>Horizontal: Science - properties and suitability of materials for particular purposes Maths - nets of shapes History - changes in textiles/ invention of zips/Velcro; Viking money pouches</p> <p>Vertical:</p>
Suggested activities:		Resources:	Useful links:	
Children investigate a range of textile products, purses and money pouches, that have a selection of stitches, joins, fabrics, finishing techniques,		A range of existing textile product linked to the chosen project.	Use a selection of purses from over the years, photographs or physical examples.	

<p>fastenings and purposes linked to the product they will design, make and evaluate.</p> <p>Children could research products from the past and the changes that have been made in textile production and products e.g. the invention of zips and Velcro (George de Mestral).</p> <p>If possible, provide pupils with a range of textile products that they can disassemble to gain an understanding of 3D shape, patterns and seam allowance.</p> <p>Ask questions to develop understanding and introduce technical vocabulary e.g. <i>What is its purpose? What properties/characteristics does the fabric have? Why has this fabric been chosen? How has the fabric been joined together? How effective are its fastenings? How has it been decorated? Does its decoration have a purpose? What would the 2D pattern piece look like? What are its measurements? How might you change the product?</i></p> <p>Pupils could evaluate a chosen product by making drawings, stating the user and purpose and detailing size, fabric, decoration etc.</p>		<p>https://easyscienceforkids.com/velcro/</p> <p>https://www.wonderopolis.org/wonder/who-invented-the-zipper</p> <p>http://www.mrjennings.co.uk/teacher/DT/D&T%20Lower%20KS2%20project%20sheets.pdf</p>
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2: Focused Tasks – Making Techniques: How do I join fabrics together?

Links to previous learning	Knowledge and second order concepts	Skills, Concepts and Vocabulary:	Assessment criteria:	Curricular links:
<p>Pupils will have explored and evaluated a range of textile products relevant to the project.</p> <p>They will understand the purpose and intended user of products. Pupils will be able to explain how 3D textile products have been made by joining 2D pieces together.</p>	<p>Substantive knowledge: (<i>What students should know.</i>)</p> <p>That 3D products can be made by joining two identical 2D shapes.</p> <p>That fabric pieces can be joined by stitching.</p> <p>Know and use technical vocabulary relevant to the project.</p> <p>Second order concepts: (<i>What students should understand</i>)</p>	<p>Skills</p> <ul style="list-style-type: none"> • that a single fabric shape can be used to make a 3D textiles product • Mark out and cut fabrics with some accuracy • Join fabrics with some accuracy using a range of stitching techniques • Work safely and accurately with a range of tools. • the correct technical vocabulary for the projects they are undertaking • <p>Key Vocabulary/concepts:</p>	<p>Can your children:</p> <p>Use a disassembled produce to create a paper pattern.</p> <p>Use a range of stitching techniques to join two pieces of fabric together.</p> <p>Use and understand the need for seam allowances.</p> <p>Evaluate the different stitches used in terms of how securely the two pieces of fabric are joined.</p>	<p>Horizontal:</p> <p>Maths - accurate measurement to nearest cm, half cm or mm</p> <p>Science - properties and suitability of materials for particular purposes</p> <p>Spoken language - Understand and use technical vocabulary;</p> <p>Vertical:</p>

		fabric/names of fabric, pattern pieces, templates, stitch, seam, seam allowance, finishing, fastening	Understand and use appropriate technical vocabulary.	
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Suggested activities:	Resources:	Useful links:
<p>Show a textiles product that has been disassembled. Look at the 2D shapes and the need for seam allowance.</p> <p>Model using a paper pattern to mark out and cut pieces of fabric. Pupils practise using prepared pattern pieces.</p> <p>Demonstrate a range of stitching techniques showing the use of and need for seam allowances. Pupils practise different stitches by sewing two small pieces together.</p> <p>Ask questions to develop understanding e.g. <i>Which joining techniques makes the strongest seam? Why? Which stitch is appropriate for the purpose? Which is the best joining techniques for the fabric? Which would be the best fastener? Why?</i></p>	<p>Variety of fabric pieces, disassembles textile products, paper, needles, thread, pens, scissors,</p>	<p>https://www.tes.com/teaching-resource/famous-designers-display-11174432 - famous designers</p> <p>Look for Running Stich, Back Stitch, Over Sew Stitch, Blanket Stitch</p> <p>https://www.tes.com/teaching-resource/dt-textiles-sewing-techniques-lower-ks2-knowledge-organiser-12284552</p>

3: Focused Tasks - Finishing Techniques: What finishing techniques could be used?

Links to previous learning	Knowledge and second order concepts	Skills, Concepts and Vocabulary:	Assessment criteria:	Curricular links:
<p>Pupils will be able to explain 3D products are made from 2D pieces and how paper patterns are used to mark out the correct shapes. Pupils will have worked with a range of different fabrics and will have practised a range of stitching techniques. They will have evaluated each stitch in terms of how securely two pieces of</p>	<p>Substantive knowledge: (<i>What students should know.</i>)</p> <ul style="list-style-type: none"> Know that finishing can be for functional or aesthetic reasons <p>Second order concepts: (<i>What students should understand</i>)</p>	<p>Skills</p> <ul style="list-style-type: none"> Choose from and use a wide range of finishing techniques to strengthen and improve the appearance of their product with some accuracy, including the use of ICT <p>Key Vocabulary/concepts: Finish/finishing technique, embroider, applique,</p>	<p>Can your children: Use a range of finishing techniques, including embroidery, applique and paint. Evaluate each technique in terms of how well they suit the purpose of the product and the needs and wants of the intended user. Understand and use appropriate technical vocabulary.</p>	<p>Horizontal: Art and Design - investigating visual and tactile qualities; Using colour and pattern</p> <p>Vertical:</p>

fabric are joined. Pupils will have used und understand the need for seam allowances.				
Suggested activities:	Resources:		Useful links:	
Provide pupils with a range of fabrics for exploring and testing out a range of finishing techniques, e.g. applique, embroidery, fabric pens/paint and printing. Ask questions to develop understanding e.g. <i>What is the effect of the decorative techniques? Which is more suited to the purpose? Which is most suited to the user?</i>	Fabrics, finishing resources e.g. fabric pens/paints, threads, applique pieces, embroidery threads,		https://www.tes.com/teaching-resource/famous-designers-display-11174432 - famous designers http://www.mrjennings.co.uk/teacher/DT/D&T%20Lower%20KS2%20project%20sheets.pdf	

4: Designing: What could I make and how could I make it?				
Links to previous learning	Knowledge and second order concepts	Skills, Concepts and Vocabulary:	Assessment criteria:	Curricular links:

<p>Pupils will know how to make 3D products from 2D shapes. They will know how to use paper patterns to mark and cut out shapes. They will know a range of stitching techniques for joining pieces of fabric together. Pupils will have considered the advantages and disadvantages of the different stitching techniques. Pupils will have tested a range of finishing techniques and evaluated each against the purpose of the product and the needs and wants of the intended user.</p>	<p>Substantive knowledge: (<i>What students should know.</i>) That products need to be designed before they are made. That designers consider the needs and wants of a user. That products are according to design criteria. That a design brief outlines the aims of a design that is needed. That design criteria are the standards the finished product must meet. That a design proposal is a response to a design brief That the order of making needs to be planned</p> <p>Second order concepts: (<i>What students should understand</i>) Design brief Design criteria Design proposal</p>	<p>Skills</p> <ul style="list-style-type: none"> • Describe the purpose of their product • Explain how particular parts of their product work • Gather information about the needs and wants of the user • Develop their own design criteria and use to inform their ideas • Generate realistic ideas, considering the purposes for which they are designing. • Communicate ideas through labelled drawings from different views showing specific features. • Select from a wider range of tools, equipment, materials and components • Plan and record the order of their work. <p>Key Vocabulary/concepts: User, purpose, design, model, prototype, annotated sketch, functional, innovative, aesthetics, pattern pieces, fabric, names of fabric, finishing techniques, stitch, seam allowance</p>	<p>Can your children: Develop ideas through discussion. Generate realistic ideas based on the needs of the user. Communicate ideas through annotated sketches, prototypes and pattern pieces. Consider the purpose of the produce and the needs of the intended user and create a set of design criteria. Plan the main stages of making.</p>	<p>Horizontal: Spoken language - understand and use technical vocabulary; give clear descriptions of ideas Engage in discussions with adults and peers Art and design - develop sketching techniques Science - properties and suitability of materials for a particular purpose.</p> <p>Vertical:</p>
<p>Suggested activities:</p>		<p>Resources:</p>	<p>Useful links:</p>	
<p>Set a context which is authentic and meaningful and share a design brief for the product they will make e.g. a Viking money pouch/purse Discuss the purpose of the product that they will be designing, making and evaluating, and who they will be for. Pupils generate a range of ideas through discussion.</p>		<p>Design resources e.g. design brief sheet, design criteria sheet, paper for sketching, planning sheet, materials for mock-ups and prototypes.</p>	<p>https://www.tes.com/teaching-resource/famous-designers-display-11174432 - famous designers</p>	

<p>Agree on design criteria that can be used to guide the development and evaluation of the projects.</p> <p>Pupils use labelled drawings from different views, to develop, model and communicate their ideas. Pupils consider e.g. <i>What will you need to include in your design? How can you improve it? What materials will you use? How will you make sure your product works well and has the right appearance?</i> Pupils could make mock-ups/paper templates of their chosen product.</p> <p>Pupils complete a design proposal, detailing the tools, equipment and materials they will use and the order in which they will make the product through. This could be done through flow charts or storyboards or through writing a list of instructions.</p>		http://www.mrjennings.co.uk/teacher/DT/D&T%20Lower%20KS2%20project%20sheets.pdf
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5: Making: Can I make the product I designed?

Links to previous learning	Knowledge and second order concepts	Skills, Concepts and Vocabulary:	Assessment criteria:	Curricular links:
<p>pupils will have identified the product they are going to make. They will have a clear understanding of the purpose of the product and of needs and wants of the intended user. Pupils will have developed a design brief and a set of design criteria to guide the development of their products. They will have a clear understanding of the order in which they will make the product.</p>	<p>Knowledge: Substantive knowledge: <i>(What students should know.)</i> That design proposals and criteria are used to guide the making process. The importance of evaluating ongoing work.</p> <p>Second order concepts: <i>(What students should understand)</i> Functionality Aesthetics Evaluate</p>	<p>Skills</p> <ul style="list-style-type: none"> • Use a range of materials and components • Work safely, hygienically and accurately with a range of tools. • Measure, mark out, cut and shape a range of materials and components using appropriate tools, equipment and techniques with some accuracy. • Assemble, join and combine materials and components with some accuracy, using a range of techniques. <p>Key Vocabulary/concepts:</p>	<p>Can your children: Select tools and fabrics according to functional properties and aesthetic qualities. Use tools to mark out, cut out and join with some accuracy. Evaluate their ongoing work and make changes to overcome problems.</p>	<p>Horizontal: Maths - accurately measure using a ruler or tape Science - choose suitable materials based on their properties.</p> <p>Vertical:</p>

		pattern pieces, fabric, names of fabric, stitch, seam, seam allowance, secure,		
Suggested activities:		Resources:	Useful links:	
<p>Remind pupils of the design brief and give them opportunity to revisit their design proposals and plans.</p> <p>Pupils collect the fabrics and tools required for their product and use their pattern pieces to mark out and cut out their shapes. Pupils use their chosen joining techniques to assemble their product. Pupils use their design criteria as an ongoing guide and encourage them to evaluate their ongoing work against this e.g. are the two pieces fastened securely together? Are there any holes in the seam? Encourage pupils to make changes to their products as they work to overcome any problems that arise.</p>		<p>Selection of fabrics and fastenings, needles, thread, scissors,</p>	<p>https://www.tes.com/teaching-resource/famous-designers-display-11174432 - famous designers</p> <p>http://www.mrjennings.co.uk/teacher/DT/D&T%20Lower%20KS2%20project%20sheets.pdf</p>	
6: Finishing: Is my product finished?				
Links to previous learning	Knowledge and second order concepts	Skills, Concepts and Vocabulary:	Assessment criteria:	Curricular links:

<p>Pupils will have experienced making products, selecting and using a range of fabrics, tools and techniques. They will have evaluated their evolving work , considering the purpose of the product and the needs and wants of the intended user, and will have use skills to overcome problems.</p>	<p>Substantive knowledge: (<i>What students should know.</i>) That products need to be finished to a high quality to make them appealing to the intended user. Know a range of techniques suitable for the product they are creating. The importance of evaluating evolving work. Second order concepts: (<i>What students should understand</i>) Finish Appeal</p>	<p>Skills Choose from and use a wide range of finishing techniques to strengthen and improve the appearance of their product with some accuracy, including the use of ICT Key Vocabulary/concepts: Finish/finishing, appearance, appealing, aesthetics, fastening, stitch, applique,</p>	<p>Can your children: Apply a range of finishing techniques suitable for the product they are making? Evaluate their developing products and use problem solving skills when things go wrong?</p>	<p>Horizontal: Art and design - use a range of tools and decorative techniques. Maths - accurately measure using rulers and measuring tape. Science - choose appropriate materials based on properties. Vertical:</p>
<p>Suggested activities:</p>		<p>Resources:</p>	<p>Useful links:</p>	
<p><i>How does your chosen finish meet the needs of the intended user?</i> Refer to design brief and proposals. Pupils use finishing techniques to complete their products, referring to the design brief and their design proposals. Pupils continue to evaluate their work e.g. <i>Which finishing technique are you using? Why are you choosing this technique? How does your chosen finish meet the needs of the intended user?</i></p>		<p>Finishing resources, e.g. needles, threads, applique pieces, buttons, zips, fabric, PVA glue, fabric paint/pens,</p>	<p>https://www.tes.com/teaching-resource/famous-designers-display-11174432 - famous designers http://www.mrjennings.co.uk/teacher/DT/D&T%20Lower%20KS2%20project%20sheets.pdf</p>	

7: Evaluating: What worked well and what could I do to make it even better?

Links to previous learning	Knowledge	Skills, Concepts and Vocabulary:	Assessment criteria:	Curricular links:
<p>Children will have generated and developed ideas for their product. They will have explored different textiles products and designed a product with an intended purpose for an intended user. They will have practised and evaluated various joining techniques and selected those appropriate to make and finish their product. They will have evaluated their evolving work and overcome problems using problem solving skills.</p>	<p>Substantive knowledge: (What students should know.) That evaluations identify the strengths and areas for development in a product. That products change and evolve through evaluations.</p> <p>Second order concepts: (What students should understand) Evaluate Develop</p>	<p>Skills</p> <ul style="list-style-type: none"> Use their design criteria to evaluate their product identifying both strengths and areas for development Consider the views of others to improve their work <p>Key Vocabulary/concepts: Evaluate, design criteria, design brief, innovative, user, purpose, function, product, ideas, appeal, finish, improve</p>	<p>Can your children: Use their design criteria to evaluate their product by judging the extent to which it suits the purpose and meets the needs of the intended user. Identify both the strengths of the product and the areas for development?</p>	<p>Horizontal: Spoken language - ask questions to develop knowledge and understanding. Give clear responses to questions. Consider the views of others. Writing - produce a written evaluation of the finished product using appropriate headings/subheadings</p> <p>Vertical:</p>
Suggested activities:		Resources:	Useful links:	
<p>Pupils evaluate their final products against the design criteria. They consider the extent to which the product meets the needs of the intended user and suits the intended purpose. Where possible allow feedback from the intended user. <i>Does the product suit the purpose? Does it suit the intended user? Are the pieces fastened securely together? How well has the product been finished? Are the materials suitable for the product? How could the product be made more appealing?</i> Pupils complete an evaluation for their own product.</p>		<p>Completed products Evaluation sheet</p>	<p>http://www.mrjennings.co.uk/teacher/DT/D&T%20Lower%20KS2%20project%20sheets.pdf</p>	

