

# ACET Junior Academies

Scheme of Work for Design Technology

Y5 Textiles - Combining different Fabric Shapes



**About this unit:** In this unit, pupils will investigate a range of functional textiles products which have been produced by combining fabric shapes. They will investigate how existing products have been constructed and how fabrics have been strengthened or stiffened to suit the purpose of the product. Pupils will build upon their earlier experiences of sewing, improving the appearance and consistency of their stitches, as they practise joining fabric pieces together. Pupils will design a textiles product for an intended user and purpose and apply their learning throughout the unit to make their product. Pupils will evaluate their finished products against the original design criteria, considering the views of others.

**Final piece ideas - tablet/mobile phone case, insulating bag/cool bag, swimming bag (link - Science Properties of materials)**

## Unit structure

1. Investigate and Evaluate: What is the function?
2. Focused Tasks: How do you make a 3D product?
3. Designing: What could I make and how will I make it?
4. Making - Planning and making: Can I make the product I designed?
5. Making - Finishing: How will I make my product appealing?
6. Evaluating: What went well? How could I improve my product?

## Links to previous and future National Curriculum units

- KS1 - Templates and joining techniques
- LKS2 - 2D shapes to 3D product

## 1: Investigate and Evaluate -

Links to previous learning	Knowledge and second order concepts	Skills, Concepts and Vocabulary:	Assessment criteria:	Curricular links:
<p>Pupils will have experience of basic stitching, joining textiles and finishing techniques.</p> <p>They will have experience of making and using simple pattern pieces.</p>	<p><b>Substantive knowledge:</b> (<i>What students should know.</i>)</p> <p>That there are a range of functional textiles products. That products have been designed, produced and evaluated. Understand how a key event/individual has influenced the development of the chosen product and/or fabric. That products can be evaluated on design, manufacture, appearance and use.</p> <p><b>Second order concepts:</b> (<i>What students should understand</i>)</p> <p>Evaluation Purpose Function Innovation</p>	<p><b>Skills</b></p> <ul style="list-style-type: none"> <li>Evaluate and discuss 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.</li> <li>Identify what the product has been made from and research how sustainable the materials are.</li> <li>Begin to evaluate how much products cost to make and how innovative they are.</li> </ul> <p><b>Key Vocabulary/concepts:</b> <a href="https://20353.stem.org.uk/Nuffield%20Glossary2/index.html">https://20353.stem.org.uk/Nuffield%20Glossary2/index.html</a></p> <p>Evaluate, user, purpose, design decisions, product, function, functional, decorative, innovative, investigate, aesthetics, authentic</p>	<p><b>Can your children:</b></p> <p>Evaluate a range of existing textile products in term of design, manufacture, functionality and fitness for purpose? Investigate and analyse how products have been constructed? Recognise the impact of designers on fabrics and products. Test the properties of different textiles?</p>	<p><b>Horizontal:</b></p> <p>Spoken language - as questions, formulate, articulate and justify answers, arguments and opinions; consider and evaluate different viewpoints. Science - scientific enquiry - plan investigations to test the properties of materials. History - possible link to significant individual linked to textiles, e.g. William Morris</p> <p><b>Vertical:</b></p>
<b>Suggested activities:</b>		<b>Resources:</b>	<b>Useful links:</b>	
<p>Children investigate, analyse and evaluate a range of functional textile products which have been produced by combining fabric shapes and adding materials. Investigate work by designers and their impact on fabrics and products. Use questions to develop children's understanding e.g. <i>Is the product</i></p>		<p>A range of existing textile product linked to the chosen project.</p>	<p><a href="https://www.tes.com/teaching-resource/famous-designers-display-11174432">https://www.tes.com/teaching-resource/famous-designers-display-11174432</a></p>	

<p><i>functional or decorative? Who would use this product? What is its purpose? What design decisions have been made? Do these textiles used match the intended purpose? What components have been used to enhance to appearance? To what extent is the design innovative?</i></p> <p>Pupils investigate and analyse how existing products have been constructed. Pupils could disassemble products and evaluate what the fabric shapes look like, how the parts have been joined, how the product has been strengthened and stiffened, what fastenings have been used and why.</p> <p>Pupils could investigate the properties of textiles through investigation e.g. exploring insulating properties, water resistance, cushioning and strength of textiles.</p> <p>Pupils complete a written evaluation of a chosen product.</p>	<p>Images of work/textiles by designers</p>	<p><a href="https://designwanted.com/design/10-most-influential-product-designers/">https://designwanted.com/design/10-most-influential-product-designers/</a></p> <p><a href="http://www.mrjennings.co.uk/teacher/DT/D&amp;T%20Upper%20KS2%20project%20sheets.pdf">http://www.mrjennings.co.uk/teacher/DT/D&amp;T%20Upper%20KS2%20project%20sheets.pdf</a></p>
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## 2: Focused Tasks

Links to previous learning	Knowledge and second order concepts	Skills, Concepts and Vocabulary:	Assessment criteria:	Curricular links:
<p>Pupils will have investigated and analysed a range of textile products relevant to the project, including how the products have been constructed. They will have critically evaluated textile products in terms of design, manufacture, functionality and fitness for purpose. Pupils will have tested the properties of different textiles. They will understand the purpose and intended user of products. Pupils will be</p>	<p><b>Substantive knowledge:</b> (<i>What students should know.</i>) A 3D 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. Know and use technical vocabulary relevant to the project.</p> <p><b>Second order concepts:</b> (<i>What students should understand</i>) Water resistance Insulation Protective</p>	<p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Know that materials can be combined and mixed to create more useful characteristics</li> <li>• Use the correct technical vocabulary for the projects they are undertaking</li> <li>• Know that a 3D textiles product can be made from a combination of fabric shapes</li> <li>• Accurately measure, mark out, cut and shape materials and components</li> <li>• Accurately assemble, join and combine materials and components</li> <li>• Accurately apply a range of finishing techniques that involve a number of steps, including those learnt in Art</li> <li>•</li> </ul>	<p><b>Can your children:</b> Thread needles and join textiles using a range of stitches? Strengthen or stiffen fabrics? Accurately measure, mark out and cut out fabric pieces using paper pattern pieces?</p>	<p><b>Horizontal:</b> Maths- creating 3D shaped from nets; accurate measuring (cm/mm) Science - select materials based on properties.</p> <p><b>Vertical:</b></p>

able to explain how 3D textile products have been made by joining		<b>Key Vocabulary/concepts:</b> Names of textiles used, pins, needles, thread, pinking shears pattern pieces, template, stitch, seam, seam allowance, finishing, fastening, right side, wrong side, hem,		
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<b>Suggested activities:</b>	<b>Resources:</b>	<b>Useful links:</b>
Provide a range of activities which allow pupils to develop skills required for their project. Pupils should practise threading needles, starting and finishing off rows of stitches, using different stitches and joining fabrics together. Each activity should build on previous learning and focus on improving the appearance and the consistency of stitches. Pupils should develop skills of 2D paper pattern making. Give the measurements of an intended product and model accurately measuring out using grid paper. Cut out the pattern piece and model using to pin onto fabric ensuring minimal wastage and leaving seam allowances. Give pupils the opportunity to practise these skills. Encourage pupils to consider the properties of the materials they are working with and the type of product they would be suitable for. Model and allow pupils the opportunity to practise a range of finishing techniques e.g. applique, fabric paint etc.	Wide variety of textiles including reclaimed and reusable fabrics, dipryl, pins, needles, thread, measuring tape, fabric scissors, pinking shears,	<a href="https://www.redtedart.com/basic-hand-stitches-beginners/">https://www.redtedart.com/basic-hand-stitches-beginners/</a>  <a href="https://www.tes.com/teaching-resource/textiles-as-a-technique-6096550">https://www.tes.com/teaching-resource/textiles-as-a-technique-6096550</a>  <a href="http://www.mrjennings.co.uk/teacher/DT/D&amp;T%20Upper%20KS2%20project%20sheets.pdf">http://www.mrjennings.co.uk/teacher/DT/D&amp;T%20Upper%20KS2%20project%20sheets.pdf</a>

### 3: Designing

<b>Links to previous learning</b>	<b>Knowledge and second order concepts</b>	<b>Skills, Concepts and Vocabulary:</b>	<b>Assessment criteria:</b>	<b>Curricular links:</b>
Pupils will be able to use a range of stitches to join fabric pieces together. They will be able to use pattern pieces to accurately mark out and cut out fabric pieces leaving seam allowances. Pupils	<b>Substantive knowledge:</b> <i>(What students should know.)</i> That a design brief outlines what a user wants a product to be like. That research should be carried out to inform design ideas. That responses from research should be used to inform the design specification.	<b>Skills</b> <ul style="list-style-type: none"> <li>Describe the purpose of their product and the features that will appeal to the user</li> <li>Gather information about the needs, wants, preferences and values of particular individuals and groups,</li> </ul>	<b>Can your children:</b> Develop ideas about the product they are going to make based on the needs, wants, preference and values of the user. Communicate ideas through annotated	<b>Horizontal:</b> Art and design - use drawing and sketching to develop and communicate ideas. Spoken language - ask questions,

<p>will have explored different techniques for insulating or strengthening textiles.</p>	<p><b>Second order concepts:</b> (What students should understand) Design brief Design criteria Design specification</p>	<p>carrying out surveys, questionnaires etc.</p> <ul style="list-style-type: none"> <li>• Develop a simple design specification to guide their thinking</li> <li>• Share and clarify ideas through discussion</li> <li>• Communicate and represent ideas in exploded diagrams, annotated sketches and cross sectional drawing</li> <li>• Draw on research to generate innovative ideas</li> <li>• Produce a list of tools, equipment and materials they need</li> <li>• Record a step-by-step plan for making</li> </ul> <p><b>Key Vocabulary/concepts:</b> Design criteria, design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief, annotated drawings</p>	<p>sketches and exploded drawings. Identify the equipment and fabrics required and produce a step-by-step plan of making.</p>	<p>formulate, articulate and justify answers. Science - select materials based on their properties Writing - produce a step-by-step plan <b>Vertical:</b></p>
<p><b>Suggested activities:</b></p>		<p><b>Resources:</b></p>	<p><b>Useful links:</b></p>	
<p>Develop a design brief with pupils within a context which is authentic and meaningful for a product e.g. a mobile phone case for a 10-year-old, swimming bag, lunch bag. Pupils generate ideas by carrying out research using surveys, interviews or questionnaires or by researching on the internet. Pupils develop a design specification for their product, carefully considering the purpose and intended user for their product. Pupils could use annotated sketches and/or exploded diagrams to communicate their ideas. Pupils could also consider availability of resources, cost, sustainability of materials.</p>			<p><a href="https://www.tes.com/teaching-resource/design-specification-template-and-example-6260297">https://www.tes.com/teaching-resource/design-specification-template-and-example-6260297</a></p> <p><a href="https://www.bbc.co.uk/teach/class-clips-video/design-and-technology-ks1-ks2-how-to-make-a-mobile-phone-cover/z47yhbk">https://www.bbc.co.uk/teach/class-clips-video/design-and-technology-ks1-ks2-how-to-make-a-mobile-phone-cover/z47yhbk</a></p> <p><a href="http://www.mrjennings.co.uk/teacher/DT/D&amp;T%20Upper%20KS2%20project%20sheets.pdf">http://www.mrjennings.co.uk/teacher/DT/D&amp;T%20Upper%20KS2%20project%20sheets.pdf</a></p>	

Pupils produce a design proposal detailing the tools, equipment and materials they will use and a step by step plan of how it will be made.		
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#### 4: Making

Links to previous learning	Knowledge and second order concepts	Skills, Concepts and Vocabulary:	Assessment criteria:	Curricular links:
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><b>Knowledge:</b>  <b>Substantive knowledge:</b>  <i>(What students should know.)</i>            That design proposals and criteria are used to guide the making process.            The importance of working within the constraints of time and cost            The importance of evaluating ongoing work.</p> <p><b>Second order concepts:</b>  <i>(What students should understand)</i>            Functionality            Constraints of time/cost            Evaluate</p>	<p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Use a wider range of materials and components</li> <li>• Work safely, hygienically and accurately with a wider range of tools.</li> <li>• Accurately measure, mark out, cut and shape materials and components.</li> <li>• Assemble, join and combine materials and components with increasing accuracy.</li> <li>• Begin to demonstrate resourcefulness when tackling practical problems.</li> </ul> <p><b>Key Vocabulary/concepts:</b>            pattern pieces, fabric, names of fabric, stitch, seam, seam allowance, secure,</p>	<p><b>Can your children:</b>            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><b>Horizontal:</b>            Science - Select and use materials based on their properties.  <b>Vertical:</b></p>
<b>Suggested activities:</b>		<b>Resources:</b>	<b>Useful links:</b>	
Give pupils the opportunity to revisit their design specifications and step-by-step plans.		Wide variety of textiles including reclaimed and reusable fabrics, dipryl, pins, needles,	<a href="http://www.mr.jennings.co.uk/teacher/DT/D&amp;T%20Upper%20KS2%20project%20sheets.pdf">http://www.mr.jennings.co.uk/teacher/DT/D&amp;T%20Upper%20KS2%20project%20sheets.pdf</a>	

<p>Pupils collect the fabrics and equipment required for their product. They should create pattern pieces to mark out and cut out their fabric shapes. Pupils use knowledge and skills from previous lessons to strengthen, cushion or insulate their fabrics before using their chosen joining technique to assemble their product. Pupils use their design specification as an ongoing guide. Encourage pupils to critically evaluate their ongoing work against this e.g. <i>are the two pieces fastened securely together? Are there any holes in the seam? Is there the right amount of cushioning?</i> Pupils make changes to their products as they work to overcome any problems that arise or to make improvements. Pupils record and changes made on their plans.</p>	<p>thread, measuring tape, fabric scissors, pinking shears, materials for insulating or strengthening e.g. bubble wrap, wadding or interfacing.</p>	
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### 5: Finishing

Links to previous learning	Knowledge and second order concepts	Skills, Concepts and Vocabulary:	Assessment criteria:	Curricular links:
<p>Pupils will have marked out, cut out and joined fabric pieces to make a textiles product. They will have chosen techniques for strengthening or stiffening products. Pupils will have used problems solving skills to overcome mistakes or problems.</p>	<p><b>Substantive knowledge:</b> (What students should know.) 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.</p> <p><b>Second order concepts:</b> (What students should understand) Finish Appeal Innovative</p>	<p><b>Skills</b></p> <ul style="list-style-type: none"> <li>Apply a range of finishing techniques, including those learnt in Art with increasing accuracy</li> <li>Begin to demonstrate resourcefulness when tackling practical problems.</li> </ul> <p><b>Key Vocabulary/concepts:</b> Design brief, design criteria, design decisions, finish/finishing techniques, appearance, appealing, innovative,</p>	<p><b>Can your children:</b> Accurately apply a range of finishing techniques suitable for the product they are making, including those learned in Art? Evaluate their developing products and use problem solving skills when things go wrong?</p>	<p><b>Horizontal:</b> Art and design - use a range of techniques to finish products.</p> <p><b>Vertical:</b></p>
<b>Suggested activities:</b>		<b>Resources:</b>	<b>Useful links:</b>	

<p>Refer to design specification and proposal. Pupils evaluate initial ideas, identify any changes to the finish, explaining their reasons.</p> <p>Pupils select appropriate materials and decorating finishing techniques to produce a well finished final product that matches the intended user and purpose. Pupils evaluate their ongoing work, using problem solving skills when they encounter mistakes or problems. Pupils record any changes made to overcome problems or to improve their product on their plan.</p>	<p>Finishing resources e.g. sequins, buttons, fabric paint</p>	<p><a href="https://www.tes.com/teaching-resource/evaluation-sheet-6096859">https://www.tes.com/teaching-resource/evaluation-sheet-6096859</a></p> <p><a href="http://www.mrjennings.co.uk/teacher/DT/D&amp;T%20Upper%20KS2%20project%20sheets.pdf">http://www.mrjennings.co.uk/teacher/DT/D&amp;T%20Upper%20KS2%20project%20sheets.pdf</a></p>
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## 6: Evaluating -

Links to previous learning	Knowledge and second order concepts	Skills, Concepts and Vocabulary:	Assessment criteria:	Curricular links:
<p>Children will have generated and developed ideas for their product. They will have designed a product with an intended purpose for an intended user. They will have practised and chosen techniques to make and finish their product. They will have evaluated their evolving work and overcome problems using problems solving skills.</p>	<p><b>Substantive knowledge:</b> (<i>What students should know.</i>)</p> <p>That evaluations identify the strengths and areas for development in terms of quality of design, manufacture and whether it is fit for purpose.</p> <p>That products are continually developing through evaluating and identifying improvements.</p> <p>That views from the user should be considered when identifying areas for improvement</p> <p><b>Second order concepts:</b> (<i>What students should understand</i>)</p> <p>Evaluate Develop Evolve Innovative</p>	<p><b>Skills</b></p> <ul style="list-style-type: none"> <li>Use their design criteria to critically evaluate their product in terms of quality of design, manufacture and whether is it fit for its intended purpose.</li> <li>Consider the views of others, including intended users, to improve their work.</li> </ul> <p><b>Key Vocabulary/concepts:</b> Evaluate, design criteria, design brief, innovative, user, purpose, authentic, innovative, function, product, ideas, appeal, finish, improve</p>	<p><b>Can your children:</b> Use their design criteria to critically evaluate their product in terms of quality of design, manufacture and whether it is fit for the intended purpose? Consider the views of others when evaluating their work and identifying improvements that could be made.</p>	<p><b>Horizontal:</b> Spoken language - Consider and evaluate others' viewpoints. Give well-structured evaluations, including relevant and accurate use of technical vocabulary. Writing - produce written evaluations of finished products.</p> <p><b>Vertical:</b></p>
<b>Suggested activities:</b>		<b>Resources:</b>	<b>Useful links:</b>	
<p>Pupils evaluate their final products, comparing it to the original design specification. They should critically evaluate the quality of design, the</p>		<p>Final products Evaluation resources</p>	<p><a href="https://www.tes.com/teaching-resource/evaluation-sheet-6096859">https://www.tes.com/teaching-resource/evaluation-sheet-6096859</a></p>	



manufacture, functionality, innovation and fitness for the intended user and for purpose. against the design criteria. They consider the extent to which the product meets the needs of the intended user and suits the intended purpose.

*Does the product suit the purpose? Does it suit the intended user? Has the stiffening/strengthening technique achieved the desired effect? Are the fabric pieces joined securely? How well has the product been made? How neat is the stitching? Are the fabrics and materials suitable for the product? How could the product be made more appealing?*

Where possible allow feedback from the intended user.

Pupils complete an evaluation for their own product.

<http://www.mrjennings.co.uk/teacher/DT/D&T%20Upper%20KS2%20project%20sheets.pdf>