

# Mendell Primary School

Aspire Challenge Achieve



## Medium Term Plan Design Technology

Year Group: 5	Term: Summer 1 2022	Teacher: Jordyn Keelan	Subject lead: Catherine O'Neill Edwards	Overview: <b>Textiles – Combining different fabric shapes</b> Design, make and evaluate a product from textiles with a specific purpose and audience in mind. Investigate a range of stitches, fabrics and fasteners	Key End Points: By the end of this unit children will -	
Links to other learning:	Relevant Prior Learning: - Sewing Y3	Future Learning: CAD and textiles in Y6	High Quality Text: <i>'Stitchin' and Pullin': A Gee's Bend Quilt'</i> by Patricia C McKissack	Risk Assessment: <ul style="list-style-type: none"> <li>- Sewing needles</li> <li>- Scissors</li> <li>- CLEAPSS - Also see CLEAPSS for guidance: Username is: light, Password is: bulb22</li> </ul>	Teacher CPD: Please read the DATA project on a page sheets attached at the end of this plan prior to teaching.	
<u>Learning Intention</u>	<u>Lesson Outline (Key Questions in colour)</u>			<u>Resources</u>	<u>Vocabulary</u>	<u>Lowest 20% Adaptations</u>
<p>I know what natural and synthetic fibres are and the advantages and disadvantages of each</p> <p>I can use running stitch, back stitch and cross stitch</p>	<p>This is a DT lesson. In DT we design and make to solve problems</p> <p><a href="https://classroom.thenational.academy/lessons/what-are-the-properties-of-different-fabrics-60r3jd?activity=video&amp;step=2&amp;view=1">https://classroom.thenational.academy/lessons/what-are-the-properties-of-different-fabrics-60r3jd?activity=video&amp;step=2&amp;view=1</a> Start video at <b>2m 05 seconds</b>. Pause video at <b>13m 34 seconds</b> (ignore requests to pause it before this) Recap: <b>What are natural fibres?</b> Fibres which can be gathered from a natural source such as plants or animals <b>What are synthetic fibres?</b> These are made from refined crude oil which creates a polymer.</p> <p>Give out 'properties of different fibres worksheet' and 'synthetic v natural fibres fact sheet'. The children should not need access to devices now, they can use the fat sheets to complete sheets. Don't forget dictionaries are also really useful sources of information so have a range of dictionaries to hand as well. Images have also been pre-prepared for children (to ensure they focus on gaining the DT knowledge rather than spending time researching), these are in the order they appear on the worksheets.</p> <p><a href="https://classroom.thenational.academy/lessons/what-are-the-different-types-of-stitches-used-in-textiles-60v30d?activity=video&amp;step=2&amp;view=1">https://classroom.thenational.academy/lessons/what-are-the-different-types-of-stitches-used-in-textiles-60v30d?activity=video&amp;step=2&amp;view=1</a> start this video at <b>2m 29 seconds</b> and pause at <b>14m 41 seconds</b>. Children will now have a go at practising running stitch. You will need to remind children how to do an 'anchor stitch' (3 small stitches in the same place or see this video here to see how to do an anchor stitch <a href="https://classroom.thenational.academy/lessons/to-experiment-with-different-joining-techniques-ccwpat?activity=video&amp;step=1">https://classroom.thenational.academy/lessons/to-experiment-with-different-joining-techniques-ccwpat?activity=video&amp;step=1</a> start <b>16m 13 sec</b> stop at <b>17 m</b>. This shows the anchor stitch: a double stitch, a loop and a knot.</p>			<p>'properties of different fibres worksheet'</p> <p>'synthetic v natural fibres fact sheet'</p> <p>Dictionaries</p> <p>Natural &amp; synthetic fibre images</p> <p>Fabric scraps/pieces (or paper if you would prefer them to practice stitches on paper)</p> <p>Needles</p> <p>Thread</p>	<p><b>Fabric</b></p> <p>Natural fibres</p> <p>Synthetic fibres</p> <p>Thread</p> <p>Stitch</p> <p><b>Running stitch</b></p> <p><b>Back stitch</b></p> <p><b>Cross stitch</b></p>	<p>Children with poor motor skills may benefit from using an embroidery frame to stitch</p>

	<p><b>Additional adult help may be required.</b> Once children have had a go at running stitch return to the second video <a href="https://classroom.thenational.academy/lessons/what-are-the-different-types-of-stitches-used-in-textiles-60v30d?activity=video&amp;step=2&amp;view=1">https://classroom.thenational.academy/lessons/what-are-the-different-types-of-stitches-used-in-textiles-60v30d?activity=video&amp;step=2&amp;view=1</a> at <b>14m 41 seconds</b>. pause at <b>21m 57 seconds</b>. Children now practice back stitch.</p> <p>Restart the video then pause at <b>28m 54 seconds</b>. Children now practice cross stitch.</p> <p>The fabric pieced the children have stitched should be stapled into the children’s books. Children reflect on today’s session and record these reflections in their books... <b>which stitch was the easiest? Which was the most difficult? Which do you think is the strongest? Which looks the best? Which would you use to make a product out of fabric?</b></p>			
<p>I can go through a design process to create my final design</p>	<p>This is a DT lesson. In DT we design and make to solve problems</p> <p><a href="https://classroom.thenational.academy/lessons/what-makes-an-effective-range-of-initial-design-ideas-cgrk8r?activity=video&amp;step=2&amp;view=1">https://classroom.thenational.academy/lessons/what-makes-an-effective-range-of-initial-design-ideas-cgrk8r?activity=video&amp;step=2&amp;view=1</a> <b>2m 03</b> start.</p> <p>This video covers:</p> <p><b>Key words for lessons</b> – children can write (or stick) these definition sin to their book.</p> <p>Design brief: ordinarily we look at Product, purpose, user.. we are adding to this now and developing it further: Who? What? Why? Where? Look at example on video. Discuss with example: purpose, product and user.</p> <p>Pause video at <b>10m 34</b>. Recap: You will be making a mobile phone protector</p> <p>In books children firstly identify: product, purpose, user then: who? what? Why? Where?</p> <p>Restart video at <b>19m 11</b> seconds pause at <b>22m 44</b>. Discuss what our rules are about sketching and drawing? We use a ruler for labels. We use our best handwriting.</p> <p>Remembering the above rules, ask children to draw labelled diagrams for their initial ides for mobile phone holders including thinking about a variety of fasteners that could be used such as: zip, button, toggle, press stud, velcro. Encourage children to sketch around 6 ideas.</p> <p><a href="https://classroom.thenational.academy/lessons/how-do-we-develop-our-design-ideas-c8w36c?activity=video&amp;step=2&amp;view=1">https://classroom.thenational.academy/lessons/how-do-we-develop-our-design-ideas-c8w36c?activity=video&amp;step=2&amp;view=1</a> start video at 5m 06 pause at 11m 14</p> <ul style="list-style-type: none"> <li>- Design development.... Have a range of fabrics for children to look through. Also have a range of fasteners for children to look at</li> <li>- Children complete two designs using annotated diagrams</li> </ul> <p>Resume video then pause at 13m09. Encourage peer reviews... either in pairs or each child has two post it notes on their work with a star ★ and a wish 🙏 children could go around the room and add their ideas and feedback to other children’s post it notes. Children can then edit their design with green pen adding and editing following feedback.</p> <p>Restart video at <b>14m 54</b> pause at <b>17m 32</b>. Children now create their final design. Children are allowed their mobile phones at this point (ensure they are all switched off) for children to take dimensions and ensure their diagrams have sizes labelled clearly. Return phones to office as soon as possible.</p>	<p>Variety of fabrics Press studs Buttons Zips velcro</p>	<p><b>Design Brief</b> Sketch Form Function Freehand sketching Labelled diagram Annotated diagram</p>	
	<p>This is a DT lesson. In DT we design and make to solve problems</p> <p>Today we are going to be using a pattern: <b>What is a pattern?</b> a pattern is the template from which the parts of a product are traced onto fabrics before being cut out and assembled. Before we start today’s lesson we need to consider H&amp;S and risk assess our equipment. We will be using fabric scissors (sharper than paper</p>	<p>Starter work sheet Straight pins Chalk Paper</p>	<p><b>Pattern</b></p>	

	<p>scissors and should only be used on fabric), needles and straight pins. Show the children the work sheet they will be completing and discuss together ideas for how to keep safe using each piece of equipment (it might even be that the activity is spread across two rooms so children have more space or children could work outside).</p> <p><a href="https://classroom.thenational.academy/lessons/how-to-use-the-tools-and-equipment-to-mark-our-phone-holder-accurately-chgked?step=2&amp;activity=video">https://classroom.thenational.academy/lessons/how-to-use-the-tools-and-equipment-to-mark-our-phone-holder-accurately-chgked?step=2&amp;activity=video</a> Start video <b>8m 05</b> pause at <b>11m 36</b>. Children create a paper prototype using the dimensions on their final design and check the mobile phone fits. These prototypes can then be stuck in to books with a reflection.</p> <p>Restart video then pause at <b>16m 09</b> Recap on seam allowance. <b>What is seam allowance?</b> Seam allowance is the area between the fabric edge and the stitching line on pieces of fabric being sewn together. <b>How big is our seam allowance?</b> 1 cm</p> <p>Children then create pattern pieces from paper. The need to label these e.g. front, back, flap (after they have made their product, these should be stuck in their books).</p> <p>Restart video at <b>17m 15</b> and pause at <b>24m 04</b>. Children use straight pins to attach their patterns to fabric and cut out using fabric scissors, these are then ready to sew in the next activity. Children recap on what their chosen stitch was at the end of lesson 1.</p>	<p>Range of fabrics (selected by children in their final design) Fabric scissors (please keep these separate and solely for fabric use – not paper as the blades will blunten)</p>		
<p>I can create a product using a temporary and permanent sewing technique</p> <p>I can evaluate my product</p>	<p>This is a DT lesson. In DT we design and make to solve problems</p> <p>In this lesson children will make their product and be sewing: additional adults recommended.</p> <p><a href="https://classroom.thenational.academy/lessons/what-stitch-will-be-most-suitable-to-join-our-pieces-of-fabric-together-70t6at?activity=video&amp;step=2&amp;view=1">https://classroom.thenational.academy/lessons/what-stitch-will-be-most-suitable-to-join-our-pieces-of-fabric-together-70t6at?activity=video&amp;step=2&amp;view=1</a> start video at <b>4m 31</b> and pause at <b>9m 52</b>.</p> <ul style="list-style-type: none"> <li>- Children tack their fabrics together with a simple running stitch</li> <li>- Children hem their fabric (if needed) with fabric glue</li> <li>- Children then do their chosen permanent stitch remembering to complete anchor stitches (the permanent stitch could be completed in a different coloured thread however, this is not necessary).</li> <li>- Children unpick or cut out the temporary stitch after the permanent stitch is complete</li> <li>- Turn product the correct way out</li> <li>- Children add fabric fasteners</li> </ul> <p>Children test their products and complete the evaluation sheet</p>	<p>Fabric pieces from last activity Needles threads Fasteners Fabric pens Evaluation sheets</p>	<p><b>Tacking</b> Temporary stitch Permanent stitch</p>	

**1. Year Groups**  
**Years**  
**5/6**

**2. Aspect of D&T**  
**Textiles**

**Focus**  
**Combining different fabric shapes**

**3. Key learning in design and technology**

**Prior learning**

- Experience of basic stitching, joining textiles and finishing techniques.
- Experience of making and using simple pattern pieces.

**Designing**

- Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.
- Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design.
- Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.

**Making**

- 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 to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

**Evaluating**

- Investigate and analyse textile products linked to their final product.
- 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.

**Technical knowledge and understanding**

- 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.

**4. What could children design, make and evaluate?**

tablet case mobile phone carrier  
shopping bag insulating bag hat/cap  
garden tool belt slippers sandals  
fabric advent calendar fabric door stop  
other – specify

**7. Links to topics and themes**

Clothing Hot and Cold Communication  
Festivals Celebrations Weather  
Sustainability Our School Environment  
other – specify

**5. Intended users**

themselves younger children  
older children teenagers parents school  
grandparents teachers gardeners  
other – specify

**8. Possible contexts**

home school leisure culture enterprise  
environment local community  
other – specify

**6. Purpose of products**

celebration educational interests hobbies  
environmental lifestyle religious  
protection other – specify

**9. Project title**

Design, make and evaluate a \_\_\_\_\_ (product) for \_\_\_\_\_ (user) for \_\_\_\_\_ (purpose).  
To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 10, 12 and 14.

**10. Investigative and Evaluative Activities (IEAs)**

- Children investigate, analyse and evaluate a range of existing products which have been produced by combining fabric shapes. Investigate work by designers and their impact on fabrics and products. Use questions to develop children's understanding e.g. *Is the product functional or decorative? Who would use this product? What is its purpose? What design decisions have been made? Do the textiles used match the intended purpose? What components have been used to enhance the appearance? To what extent is the design innovative?*
- Children investigate and analyse how existing products have been constructed. Children disassemble a product 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.
- Children investigate properties of textiles through investigation e.g. exploring insulating properties, water resistance, wear and strength of textiles.

**12. Focused Tasks (FTs)**

- Develop skills of threading needles and joining textiles using a range of stitches. This activity must build upon children's earlier experiences of stitches e.g. improving appearance and consistency of stitches and introducing new stitches. If available, demonstrate and allow children to use sewing machines to join fabric with close adult supervision.
- Develop skills of sewing textiles by joining right side together and making seams. Children should investigate how to sew and shape curved edges by snipping seams, how to tack or attach wadding or stiffening and learn how to start and finish off a row of stitches.
- Develop skills of 2-D paper pattern making using grid or tracing paper to create a 3-D dipryl mock-up of a chosen product. Remind/teach how to pin a pattern on to fabric ensuring limited wastage, how to leave a seam allowance and different cutting techniques.
- Develop skills of computer-aided design (CAD) by using on-line pattern making software to generate pattern pieces. Investigate using art packages on the computer to design prints that can be applied to textiles using iron transfer paper.

**14. Design, Make and Evaluate Assignment (DMEA)**

- Set an authentic and meaningful design brief. Children generate ideas by carrying out research using e.g. surveys, interviews, questionnaires and the web. Children develop a simple design specification for their product.
- Communicate ideas through detailed, annotated drawings from different perspectives and/or computer-aided design. Drawings should indicate design decisions made, the methods of strengthening, the type of fabrics to be used and the types of stitching that will be incorporated.
- Produce step-by-step plans, lists of tools equipment, fabrics and components needed. Allocate tasks within a team if appropriate.
- Make high quality products applying knowledge, understanding and skills from IEAs and FTs. Incorporate simple computer-aided manufacture (CAM) if appropriate e.g. printing on fabric. Children use a range of decorating techniques to ensure a well-finished final product that matches the intended user and purpose.
- Evaluate both as the children proceed with their work and the final product in use, comparing the final product to the original design specification. Critically evaluate the quality of the design, the manufacture, functionality, innovation shown and fitness for intended user and purpose, considering others' opinions. Communicate the evaluation in various forms e.g. writing for a particular purpose, giving a well-structured oral evaluation, speaking clearly and fluently.

**11. Related learning in other subjects**

- **Spoken language** – ask questions, formulate, articulate and justify answers, arguments and opinions. Consider and evaluate different viewpoints.
- **Science** – work scientifically investigating properties of fabrics. Children plan different types of scientific enquiries to answer questions.
- **History** – significant person/people in their locality linked to textiles and products e.g. William Morris, Amanda Wakeley.

**13. Related learning in other subjects**

- **Mathematics** – apply knowledge of how 2-D nets can be formed into 3-D shapes; apply skills of accurate measuring using standard units i.e. cm/mm.
- **Art and design** – investigate methods of adding colour, pattern and texture on to textiles and how to make their own textiles through weaving or felt making.
- **Computing** – children express themselves and develop ideas using a range of information and communication technology resources.

**15. Related learning in other subjects**

- **Art and design** – use and apply drawing skills.
- **Writing and computing** – write and record a radio advert, making use of persuasive writing features, sound effects and music to promote the final product or event it is advertising.
- **Computing** – children express themselves and develop ideas using a range of information and communication technology resources.
- **Spoken language** – consider and evaluate others' viewpoints. Give a well-structured oral evaluation to include relevant technical vocabulary.

**16. Possible resources**

existing textile products for investigation and deconstruction linked to their product

wide selection of textiles including reclaimed and reusable fabrics, dipryl

pins, needles, thread, measuring tape, left/right handed fabric scissors, pinking shears iron, iron transfer paper, sewing machine

range of fastenings, materials for insulating or strengthening e.g. bubble wrap, wadding, interfacing

finishing materials e.g. sequins, buttons, fabric paints

**17. Key vocabulary**

seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces

name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper

design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype

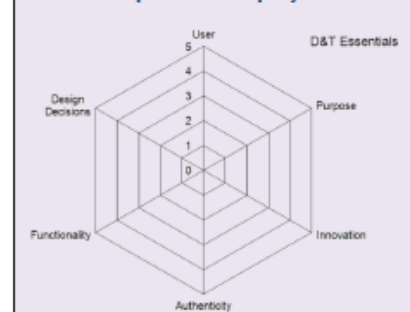
**18. Key competencies**

problem-solving teamwork negotiation  
consumer awareness organisation motivation  
persuasion leadership perseverance  
other – specify

**19. Health and safety**

Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.

**20. Overall potential of project**



Years 5/6

## Textiles

Combining different fabric shapes

### Instant CPD



### Tips for teachers

- ✓ Choose fabrics carefully. Shiny, heavyweight or fabrics that fray easily are often difficult to work with and can be frustrating. Have fabric cut into manageable sizes.
- ✓ Investigate using materials other than fabrics e.g. for handles. Plastic bags can be cut into strips and plaited.
- ✓ To make the activity more manageable limit the choice of decorating techniques.
- ✓ Keep scissors for fabric only.
- ✓ Make sure that you have plenty of pins and needles for children to use.
- ✓ Arrange zones in the class where children will find materials and resources.
- ✓ Ensure children have a basic understanding of stitching techniques, threading needles, starting and finishing off.
- ✓ Make mock-ups, then alter and refine and go back to initial design ideas to amend as necessary e.g. change measurements. Ensure the children keep all their modifications as part of the ongoing evaluation and for their final evaluation.
- ✓ Enlist the help of a local textile designer if available.
- ✓ Children can make their own demonstration videos to show e.g. how to join in different ways or how to complete a range of stitches. Different groups could show how to do different tasks and then share them.
- ✓ If using sewing machines, either hand or electric, make sure that their use is very closely supervised, using, for example, trained adult volunteers. If this cannot be achieved, children can tack the fabric together and an adult can use the machine.

### Useful resources at [www.data.org.uk](http://www.data.org.uk)

- [Designing with textiles](#)
- [Designer bags](#)
- [A to Z of D&T](#)
- [Working with Materials](#)
- [Butterflies in My Tummy](#)

### Teaching aids – fasteners

Children may want to use a fastener which should be appropriate for the purpose for the product.



Zip

Velcro

Clasp



Toggles

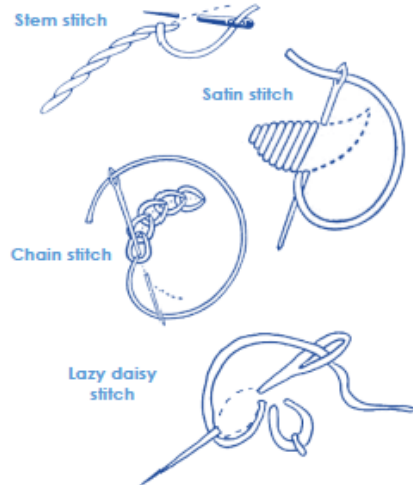
Ties

Buttons



Press studs

### Stitches



### Using stitches as a finish for the product.

The children could design their finish for their product using a variety of appropriate stitches. They could draw enlarged examples of e.g. insects, flowers, animals and then decide which stitch would be best for each part. Use square paper for a grid to ensure the stitches are in the right place and are the right size.



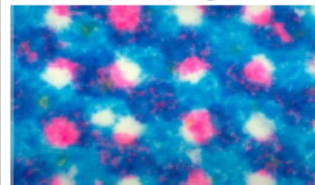
Appliqué



Embroidery

### Tie Dye

Children could decorate their fabric before they make up their product by tie dyeing.



The key to success is to tie the fabric very tightly with e.g. rubber bands or string so that the dye is prevented from reaching that part of the fabric.

### Designing, making and evaluating a belt for garden tools

An iterative process is the relationship between a pupil's ideas and how they are communicated and clarified through activity. This is an example of how the iterative design and make process might be experienced by an individual pupil during this project:

THOUGHT	ACTION
What are the features of a successful product? What features do I need to include in a functional, innovative and authentic product?	Researching, investigating, disassembling and evaluating existing products and consulting 'real life' designers.
What knowledge and skills do I need to be able to design and make a good quality product?	Investigating and practising using a range of methods to join fabrics together and making judgments about the strength and appropriateness of each technique.
How do I make a paper pattern for the product I want to produce?	Practising finishing techniques and, if possible, learning to use a sewing machine.
What design decisions do I need to make? How can I communicate my ideas for my product in an effective way?	Creating a 2-D paper pattern with a seam allowance. Developing ideas through research, working drawings, computer-aided design, discussion, paper mock-ups and modelling.
How will I show innovation? Who will be the user of my product and what are their needs, wants and values? What will be the purpose of my product?	Thinking about the user and purpose and developing specifications for products. Formulating a clear plan of work and allocating tasks if appropriate.
More thoughts... appraising, reflecting, refining.	Constantly self-evaluating and making changes if the product is not fulfilling the specification.
Does my product meet the needs and wants of the user? Is it appealing and does it fulfill a purpose? Is it innovative?	Testing final products with the intended user and making an evaluation of how successful they are.

### Glossary

- **Mock up** – quick 3-D modelling using easy to work and cheaper materials and temporary joints. Useful for checking proportions and scale.
- **Pattern or template** – a shape drawn to exact shape and size, used to assist in cutting out.
- **Seam allowance** – extra fabric allowed for joining together - 15mm for domestic patterns.
- **Specification** – describes what a product has to do.
- **Tacking** – large running stitches to hold pieces of fabric together temporarily.
- **Working drawing** – detailed drawing contains all information needed to make a product but is updated as changes are made.

